

Los Alamos National Laboratory Chemistry Division

Periodic Table of the Elements

1A 1 H $1s^1$ hydrogen 1.008																	2 He $1s^2$ helium 4.003						
3 Li $[\text{He}]2s^1$ lithium 6.941	4 Be $[\text{He}]2s^2$ beryllium 9.012																	5 B $[\text{He}]2s^2 2p^1$ boron 10.81	6 C $[\text{He}]2s^2 2p^2$ carbon 12.01	7 N $[\text{He}]2s^2 2p^3$ nitrogen 14.01	8 O $[\text{He}]2s^2 2p^4$ oxygen 16.00	9 F $[\text{He}]2s^2 2p^5$ fluorine 19.00	10 Ne $[\text{He}]2s^2 2p^6$ neon 20.18
11 Na $[\text{Ne}]3s^1$ sodium 22.99	12 Mg $[\text{Ne}]3s^2$ magnesium 24.31	3B	4B	5B	6B	7B	8B		11B	12B	13 Al $[\text{Ne}]3s^2 3p^1$ aluminum 26.98	14 Si $[\text{Ne}]3s^2 3p^2$ silicon 28.09	15 P $[\text{Ne}]3s^2 3p^3$ phosphorus 30.97	16 S $[\text{Ne}]3s^2 3p^4$ sulfur 32.07	17 Cl $[\text{Ne}]3s^2 3p^5$ chlorine 35.45	18 Ar $[\text{Ne}]3s^2 3p^6$ argon 39.95							
19 K $[\text{Ar}]4s^1$ potassium 39.10	20 Ca $[\text{Ar}]4s^2$ calcium 40.08	21 Sc $[\text{Ar}]4s^2 3d^1$ scandium 44.96	22 Ti $[\text{Ar}]4s^2 3d^2$ titanium 47.88	23 V $[\text{Ar}]4s^2 3d^3$ vanadium 50.94	24 Cr $[\text{Ar}]4s^1 3d^5$ chromium 52.00	25 Mn $[\text{Ar}]4s^2 3d^5$ manganese 54.94	26 Fe $[\text{Ar}]4s^2 3d^6$ iron 55.85	27 Co $[\text{Ar}]4s^2 3d^7$ cobalt 58.93	28 Ni $[\text{Ar}]4s^2 3d^8$ nickel 58.69	29 Cu $[\text{Ar}]4s^1 3d^{10}$ copper 63.55	30 Zn $[\text{Ar}]4s^2 3d^{10}$ zinc 65.39	31 Ga $[\text{Ar}]4s^2 3d^{10} 4p^1$ gallium 69.72	32 Ge $[\text{Ar}]4s^2 3d^{10} 4p^2$ germanium 72.58	33 As $[\text{Ar}]4s^2 3d^{10} 4p^3$ arsenic 74.92	34 Se $[\text{Ar}]4s^2 3d^{10} 4p^4$ selenium 78.96	35 Br $[\text{Ar}]4s^2 3d^{10} 4p^5$ bromine 79.90	36 Kr $[\text{Ar}]4s^2 3d^{10} 4p^6$ krypton 83.80						
37 Rb $[\text{Kr}]5s^1$ rubidium 85.47	38 Sr $[\text{Kr}]5s^2$ strontium 87.62	39 Y $[\text{Kr}]5s^2 4d^1$ yttrium 88.91	40 Zr $[\text{Kr}]5s^2 4d^2$ zirconium 91.22	41 Nb $[\text{Kr}]5s^1 4d^4$ niobium 92.91	42 Mo $[\text{Kr}]5s^1 4d^5$ molybdenum 95.94	43 Tc $[\text{Kr}]5s^2 4d^5$ technetium (98)	44 Ru $[\text{Kr}]5s^1 4d^7$ ruthenium 101.1	45 Rh $[\text{Kr}]5s^1 4d^8$ rhodium 102.9	46 Pd $[\text{Kr}]4d^{10}$ palladium 106.4	47 Ag $[\text{Kr}]5s^1 4d^{10}$ silver 107.9	48 Cd $[\text{Kr}]5s^2 4d^{10}$ cadmium 112.4	49 In $[\text{Kr}]5s^2 4d^{10} 5p^1$ indium 114.8	50 Sn $[\text{Kr}]5s^2 4d^{10} 5p^2$ tin 118.7	51 Sb $[\text{Kr}]5s^2 4d^{10} 5p^3$ antimony 121.8	52 Te $[\text{Kr}]5s^2 4d^{10} 5p^4$ tellurium 127.6	53 I $[\text{Kr}]5s^2 4d^{10} 5p^5$ iodine 126.9	54 Xe $[\text{Kr}]5s^2 4d^{10} 5p^6$ xenon 131.3						
55 Cs $[\text{Xe}]6s^1$ cesium 132.9	56 Ba $[\text{Xe}]6s^2$ barium 137.3	57 La* $[\text{Xe}]6s^2 5d^1$ lanthanum 138.9	72 Hf $[\text{Xe}]6s^2 4f^{14} 5d^2$ hafnium 178.5	73 Ta $[\text{Xe}]6s^2 4f^{14} 5d^3$ tantalum 180.9	74 W $[\text{Xe}]6s^2 4f^{14} 5d^4$ tungsten 183.9	75 Re $[\text{Xe}]6s^2 4f^{14} 5d^5$ rhenium 186.2	76 Os $[\text{Xe}]6s^2 4f^{14} 5d^6$ osmium 190.2	77 Ir $[\text{Xe}]6s^2 4f^{14} 5d^7$ iridium 190.2	78 Pt $[\text{Xe}]6s^1 4f^{14} 5d^9$ platinum 195.1	79 Au $[\text{Xe}]6s^1 4f^{14} 5d^{10}$ gold 197.0	80 Hg $[\text{Xe}]6s^2 4f^{14} 5d^{10}$ mercury 200.5	81 Tl $[\text{Xe}]6s^2 4f^{14} 5d^{10} 6p^1$ thallium 204.4	82 Pb $[\text{Xe}]6s^2 4f^{14} 5d^{10} 6p^2$ lead 207.2	83 Bi $[\text{Xe}]6s^2 4f^{14} 5d^{10} 6p^3$ bismuth 208.9	84 Po $[\text{Xe}]6s^2 4f^{14} 5d^{10} 6p^4$ polonium (209)	85 At $[\text{Xe}]6s^2 4f^{14} 5d^{10} 6p^5$ astatine (210)	86 Rn $[\text{Xe}]6s^2 4f^{14} 5d^{10} 6p^6$ radon (222)						
87 Fr $[\text{Rn}]7s^1$ francium (223)	88 Ra $[\text{Rn}]7s^2$ radium (226)	89 Ac~ $[\text{Rn}]7s^2 6d^1$ actinium (227)	104 Rf $[\text{Rn}]7s^2 5f^{14} 6d^2$ rutherfordium (257)	105 Db $[\text{Rn}]7s^2 5f^{14} 6d^3$ dubnium (260)	106 Sg $[\text{Rn}]7s^2 5f^{14} 6d^4$ seaborgium (263)	107 Bh $[\text{Rn}]7s^2 5f^{14} 6d^5$ bohrium (262)	108 Hs $[\text{Rn}]7s^2 5f^{14} 6d^6$ hassium (265)	109 Mt $[\text{Rn}]7s^2 5f^{14} 6d^7$ meitnerium (266)	110 Ds $[\text{Rn}]7s^1 5f^{14} 6d^9$ darmstadtium (271)	111 Uuu (272)	112 Uub (277)	114 Uuq (296)		116 Uuh (298)		118 Uuo (?)							
Lanthanide Series*		58 Ce $[\text{Xe}]6s^2 4f^1 5d^1$ cerium 140.1	59 Pr $[\text{Xe}]6s^2 4f^3$ praseodymium 140.9	60 Nd $[\text{Xe}]6s^2 4f^4$ neodymium 144.2	61 Pm $[\text{Xe}]6s^2 4f^5$ promethium (147)	62 Sm $[\text{Xe}]6s^2 4f^6$ samarium (150.4)	63 Eu $[\text{Xe}]6s^2 4f^7$ europium 152.0	64 Gd $[\text{Xe}]6s^2 4f^7 5d^1$ gadolinium 157.3	65 Tb $[\text{Xe}]6s^2 4f^9$ terbium 158.9	66 Dy $[\text{Xe}]6s^2 4f^{10}$ dysprosium 162.5	67 Ho $[\text{Xe}]6s^2 4f^{11}$ holmium 164.9	68 Er $[\text{Xe}]6s^2 4f^{12}$ erbium 167.3	69 Tm $[\text{Xe}]6s^2 4f^{13}$ thulium 168.9	70 Yb $[\text{Xe}]6s^2 4f^{14}$ ytterbium 173.0	71 Lu $[\text{Xe}]6s^2 4f^{14} 5d^1$ lutetium 175.0								
Actinide Series~		90 Th $[\text{Rn}]7s^2 6d^2$ thorium 232.0	91 Pa $[\text{Rn}]7s^2 5f^2 6d^1$ protactinium (231)	92 U $[\text{Rn}]7s^2 5f^3 6d^1$ uranium (238)	93 Np $[\text{Rn}]7s^2 5f^4 6d^1$ neptunium (237)	94 Pu $[\text{Rn}]7s^2 5f^6$ plutonium (242)	95 Am $[\text{Rn}]7s^2 5f^7$ americium (243)	96 Cm $[\text{Rn}]7s^2 5f^7 6d^1$ curium (247)	97 Bk $[\text{Rn}]7s^2 5f^9$ berkelium (247)	98 Cf $[\text{Rn}]7s^2 5f^{10}$ californium (249)	99 Es $[\text{Rn}]7s^2 5f^{11}$ einsteinium (254)	100 Fm $[\text{Rn}]7s^2 5f^{12}$ fermium (253)	101 Md $[\text{Rn}]7s^2 5f^{13}$ mendelevium (256)	102 No $[\text{Rn}]7s^2 5f^{14}$ nobelium (254)	103 Lr $[\text{Rn}]7s^2 5f^{14} 6d^1$ lawrencium (257)								