

# Periodic Table of Elements

$1s^22s^22p^63s^23p^64s^23d^{10}4p^65s^24d^{10}5p^66s^24f^{14}5d^{10}6p^67s^25f^{14}6d^{10}7p^6$

1	1 IA																18 VIIIA																			
	1 2.20 <b>H<sub>2</sub></b> Hydrogen 1.01																2 <b>He</b> Helium 4.00																			
2	3 0.98 <b>Li</b> Lithium 6.94		4 1.57 <b>Be</b> Beryllium 9.01														5 2.04 <b>B</b> Boron 10.81		6 2.55 <b>C</b> Carbon 12.01		7 3.14 <b>N<sub>2</sub></b> Nitrogen 14.01		8 3.44 <b>O<sub>2</sub></b> Oxygen 16.00		9 3.98 <b>F<sub>2</sub></b> Fluorine 19.00		10 <b>Ne</b> Neon 20.18									
	11 0.93 <b>Na</b> Sodium 22.99		12 1.31 <b>Mg</b> Magnesium 24.31														13 1.61 <b>Al</b> Aluminium 26.98		14 1.90 <b>Si</b> Silicon 28.09		15 2.19 <b>P</b> Phosphorus 30.97		16 2.38 <b>S</b> Sulphur 32.10		17 3.16 <b>Cl<sub>2</sub></b> Chlorine 35.45		18 <b>Ar</b> Argon 39.95									
3																																				
4	19 0.82 <b>K</b> Potassium 39.10		20 1.00 <b>Ca</b> Calcium 40.08		21 1.36 <b>Sc</b> Scandium 44.96		22 1.54 <b>Ti</b> Titanium 47.87		23 1.63 <b>V</b> Vanadium 50.94		24 1.66 <b>Cr★</b> Chromium 52.00		25 1.55 <b>Mn</b> Manganese 54.94		26 1.83 <b>Fe</b> Iron 55.85		27 1.88 <b>Co</b> Cobalt 58.93		28 1.91 <b>Ni</b> Nickel 58.69		29 1.90 <b>Cu★</b> Copper 63.55		30 1.65 <b>Zn</b> Zinc <sup>(2+)</sup> 65.38		31 1.81 <b>Ga</b> Gallium 69.72		32 2.01 <b>Ge</b> Germanium 72.63		33 2.18 <b>As</b> Arsenic 74.92		34 2.55 <b>Se</b> Selenium 78.97		35 2.96 <b>Br<sub>2</sub></b> Bromine 79.90		36 3.00 <b>Kr</b> Krypton 83.80	
	37 0.82 <b>Rb</b> Rubidium 85.47		38 0.95 <b>Sr</b> Strontium 87.62		39 1.22 <b>Y</b> Yttrium 88.91		40 1.33 <b>Zr</b> Zirconium 91.22		41 1.6 <b>Nb★</b> Niobium 92.91		42 2.16 <b>Mo★</b> Molybdenum 95.95		43 1.9 <b>Tc</b> Technetium (98)		44 2.2 <b>Ru★</b> Ruthenium 101.07		45 2.28 <b>Rh★</b> Rhodium 102.91		46 2.20 <b>Pd★★</b> Palladium 106.42		47 1.93 <b>Ag</b> Silver <sup>(1+)</sup> 107.87		48 1.69 <b>Cd</b> Cadmium <sup>(2+)</sup> 112.41		49 1.78 <b>In</b> Indium 114.82		50 1.96 <b>Sn★</b> Tin 118.71		51 2.05 <b>Sb</b> Antimony 121.76		52 2.1 <b>Te</b> Tellurium 127.60		53 2.86 <b>I<sub>2</sub></b> Iodine 126.90		54 2.60 <b>Xe</b> Xenon 131.29	
5	55 0.79 <b>Cs</b> Caesium 132.91		56 0.89 <b>Ba</b> Barium 137.33		57-71 <b>La-Lu</b> Lanthanide		72 1.3 <b>Hf</b> Hafnium 178.49		73 1.5 <b>Ta</b> Tantalum 180.95		74 2.36 <b>W</b> Tungsten 183.84		75 1.9 <b>Re</b> Rhenium 186.21		76 2.2 <b>Os</b> Osmium 190.23		77 2.20 <b>Ir</b> Iridium 192.22		78 2.28 <b>Pt★</b> Platinum 195.08		79 2.54 <b>Au★</b> Gold 196.97		80 2.00 <b>Hg</b> Mercury 200.59		81 1.62 <b>Tl</b> Thallium 204.38		82 1.87 <b>Pb</b> Lead 207.2		83 2.02 <b>Bi</b> Bismuth 208.98		84 2.0 <b>Po</b> Polonium (209)		85 2.2 <b>At</b> Astatine (210)		86 2.2 <b>Rn</b> Radon (222)	
	87 0.7 <b>Fr</b> Francium (223)		88 0.9 <b>Ra</b> Radium (226)		89-103 <b>Ac-Lr</b> Actinide		104 <b>Rf</b> Rutherfordium (267)		105 <b>Db</b> Dubnium (268)		106 <b>Sg</b> Seaborgium (269)		107 <b>Bh</b> Bohrium (270)		108 <b>Hs</b> Hassium (277)		109 <b>Mt</b> Meitnerium (278)		110 <b>Ds</b> Darmstadtium (281)		111 <b>Rg</b> Roentgenium (282)		112 <b>Cn</b> Copernicium (285)		113 <b>Nh</b> Nihonium (286)		114 <b>Fl</b> Flerovium (289)		115 <b>Mc</b> Moscovium (290)		116 <b>Lv</b> Livermorium (293)		117 <b>Ts</b> Tennessine (294)		118 <b>Og</b> Ogannesson (294)	
6																																				
7																																				

Alkali Metal

Alkaline-Earth

Metal

Metalloid

Non-metal

Halogen

Noble Gas

Lanthanide/Actinide

★

Aufbau Exception

Synthetic

Liquid

 or 

Gas

@ Room Temp.

EN, IE, EA, &  $\mathcal{Z}_{eff}$  increase  $\rightarrow \uparrow$

Radius & Metallic increase  $\leftarrow \downarrow$

57	1.1	58	1.12	59	1.13	60	1.14	61	1.13	62	1.17	63	1.2	64	1.2	65	1.1	66	1.22	67	1.23	68	1.24	69	1.25	70	1.1	71	1.27
La		Ce		Pr		Nd		Pm		Sm		Eu		Gd		Tb		Dy		Ho		Er		Tm		Yb		Lu	
Lanthanum	138.91	Cerium	140.12	Praseodymium	140.91	Neodymium	144.24	Promethium	(145)	Samarium	150.36	Europium	151.96	Gadolinium	157.25	Terbium	158.93	Dysprosium	162.50	Holmium	164.93	Erbium	167.26	Thulium	168.93	Ytterbium	173.05	Lutetium	174.97
89	1.1	90	1.3	91	1.5	92	1.38	93	1.36	94	1.28	95	1.13	96	1.28	97	1.3	98	1.3	99	1.3	100	1.3	101	1.3	102	1.3	103	1.3
Ac		Th		Pa		U		Np		Pu		Am		Cm		Bk		Cf		Es		Fm		Md		No		Lr	
Actinium	(227)	Thorium	232.04	Protactinium	231.04	Uranium	238.03	Neptunium	(237)	Plutonium	(244)	Americium	(243)	Curium	(247)	Berkelium	(247)	Californium	(251)	Einsteinium	(252)	Fermium	(257)	Mendelevium	(258)	Nobelium	(259)	Lawrencium	(266)