

Periodic Table of Elements

$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^{14} 6d^{10} 7p^6$

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

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	Lanthanum	Ce	Cerium	Pr	Praseodymium	Nd	Neodymium	Pm	Promethium	Sm	Samarium	Eu	Europium	Gd	Gadolinium	Tb	Terbium	Dy	Dysprosium	Ho	Holmium	Er	Erbium	Tm	Thulium	Yb	Ytterbium	Lu	Lutetium
138.91		140.12		140.91		144.24		(145)		150.36		151.96		157.25		158.93		162.50		164.93		167.26		168.93		173.05		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	Actinium	Th	Thorium	Pa	Protactinium	U	Uranium	Np	Neptunium	Pu	Plutonium	Am	Americium	Cm	Curium	Bk	Berkelium	Cf	Californium	Es	Einsteinium	Fm	Fermium	Md	Mendelevium	No	Nobelium	Lr	Lawrencium
(227)		232.04		231.04		238.03		(237)		(244)		(243)		(247)		(247)		(251)		(252)		(257)		(258)		(259)		(266)	