




Periodic Table of the Elements

Period	1	1 A																18 VIII A																																																							
	1	1s	<table border="1"> <tr> <td>1</td> <td>H</td> <td colspan="14"></td> <td>2</td> <td>He</td> </tr> <tr> <td></td> <td>hydrogen</td> <td colspan="14"></td> <td></td> <td>helium</td> </tr> <tr> <td></td> <td>1.008</td> <td colspan="14"></td> <td></td> <td>4.003</td> </tr> </table>																1	H															2	He		hydrogen																helium		1.008																4.003	
	1	H															2	He																																																							
		hydrogen																helium																																																							
		1.008																4.003																																																							
	2	2s	3	Li	4	Be															10	Ne																																																			
				lithium		beryllium																neon																																																			
			6.941		9.012																20.18																																																				
3	3s	11	Na	12	Mg															18	Ar																																																				
			sodium		magnesium																argon																																																				
			22.99		24.31																39.95																																																				
4	4s	19	K	20	Ca															36	Kr																																																				
			potassium		calcium																krypton																																																				
			39.10		40.08																83.80																																																				
5	5s	37	Rb	38	Sr															54	Xe																																																				
			rubidium		strontium																xenon																																																				
			85.47		87.62																131.3																																																				
6	6s	55	Cs	56	Ba															86	Rn																																																				
			cesium		barium																radon																																																				
			132.9		137.3																222																																																				
7	7s	87	Fr	88	Ra															118	Uuo																																																				
			francium		radium																ununoctium																																																				
			223		226																294																																																				

atomic # →	29	+2,1	← common oxidation states
atomic symbol →	Cu		
English element name →	copper		
	63.55		← atomic mass (rounded)

	Gases		Liquids		Metalloids
---	-------	---	---------	--	------------

3	4	5	6	7	8	9	10	11	12
III B	IV B	V B	VI B	VII B	VIII B	VIII B	VIII B	I B	II B

3d	21	+3	22	+4,3,2	23	+5,2,3,4	24	+3,2,6	25	+2,3,4,6,7	26	+3,2	27	+2,3	28	+2,3	29	+2,1	30	+2
	Sc		Ti		V		Cr		Mn		Fe		Co		Ni		Cu		Zn	
	scandium		titanium		vanadium		chromium		manganese		iron		cobalt		nickel		copper		zinc	
	44.96		47.87		50.94		52.00		54.94		55.85		58.93		58.69		63.55		65.41	
4d	39	+3	40	+4	41	+5,3	42	+6,3,5	43	+7,4,6	44	+4,3,6,8	45	+3,4,6	46	+2,4	47	+1	48	+2
	Y		Zr		Nb		Mo		Tc		Ru		Rh		Pd		Ag		Cd	
	yttrium		zirconium		niobium		molybdenum		technetium		ruthenium		rhodium		palladium		silver		cadmium	
	88.91		91.22		92.91		95.94		98		101.1		102.9		106.4		107.9		112.4	
† 5d	71	+3	72	+4	73	+5	74	+6,4	75	+7,4,6	76	+4,6,8	77	+4,3,6	78	+4,2	79	+3,1	80	+2,1
	Lu		Hf		Ta		W		Re		Os		Ir		Pt		Au		Hg	
	lutetium		hafnium		tantalum		tungsten		rhenium		osmium		iridium		platinum		gold		mercury	
	175.0		178.5		180.9		183.8		186.2		190.2		192.2		195.1		197.0		200.6	
‡ 6d	103	+3	104	+4	105	+5,4	106	+6,3,4,5	107	+4,3,6,8	108	+4,3,5,6	109	+3	110	+3,4	111	+3	112	+2
	Lr		Rf		Db		Sg		Bh		Hs		Mt		Ds		Rg		Uub	
	lawrencium		rutherfordium		dubnium		seaborgium		bohrium		hassium		meitnerium		darmstadtium		roentgenium		ununbium	
	262		261		262		266		264		277		268		281		272		285	

† 4f	57	+3	58	+3,4	59	+3,4	60	+3	61	+3	62	+3,2	63	+3,2	64	+3	65	+3,4	66	+3	67	+3	68	+3	69	+3,2	70	+3,2
	La		Ce		Pr		Nd		Pm		Sm		Eu		Gd		Tb		Dy		Ho		Er		Tm		Yb	
	lanthanum		cerium		praseodymium		neodymium		promethium		samarium		europium		gadolinium		terbium		dysprosium		holmium		erbium		thulium		ytterbium	
	138.9		140.1		140.9		144.2		145		150.4		152.0		157.3		158.9		162.5		164.9		167.3		168.9		173.0	
‡ 5f	89	+3	90	+4	91	+5,4	92	+6,3,4,5	93	+5,3,4,6	94	+4,3,5,6	95	+3	96	+3	97	+3,4	98	+3	99	+3	100	+3	101	+3,2	102	+2,3
	Ac		Th		Pa		U		Np		Pu		Am		Cm		Bk		Cf		Es		Fm		Md		No	
	actinium		thorium		protactinium		uranium		neptunium		plutonium		americium		curium		berkelium		californium		einsteinium		fermium		mendelevium		nobelium	
	227		232.0		231.0		238.0		237		239		243		247		247		251		252		257		258		259	

Common Polyatomic Ions

ammonium	NH ₄ ⁺¹	perchlorate	ClO ₄ ⁻¹	hydrogen sulfate	HSO ₄ ⁻¹	sulfate	SO ₄ ⁻²	oxalate	C ₂ O ₄ ⁻²
hydronium	H ₃ O ⁺¹	chlorate	ClO ₃ ⁻¹	sulfate	HSO ₄ ⁻¹	sulfite	SO ₃ ⁻²	silicate	SiO ₃ ⁻²
acetate	C ₂ H ₃ O ₂ ⁻¹ CH ₃ COO ⁻¹	chlorite	ClO ₂ ⁻¹	permanganate	MnO ₄ ⁻¹	phthalate	C ₈ H ₄ O ₄ ⁻²	peroxide	O ₂ ⁻²
hydroxide	OH ⁻¹	hypochlorite	ClO ⁻¹	periodate	IO ₄ ⁻¹	chromate	CrO ₄ ⁻²	tetraborate	B ₄ O ₇ ⁻²
cyanide	CN ⁻¹	nitrate	NO ₃ ⁻¹	hydrogen carbonate	HCO ₃ ⁻¹	dichromate	Cr ₂ O ₇ ⁻²	borate	BO ₃ ⁻³
cyanate	OCN ⁻¹	nitrite	NO ₂ ⁻¹	dihydrogen phosphate	H ₂ PO ₄ ⁻¹	carbonate	CO ₃ ⁻²	arsenate	AsO ₄ ⁻³
thiocyanate	SCN ⁻¹	bromate	BrO ₃ ⁻¹	phosphate	H ₂ PO ₄ ⁻¹	hydrogen phosphate	HPO ₄ ⁻²	phosphate	PO ₄ ⁻³
		iodate	IO ₃ ⁻¹					orthosilicate	SiO ₄ ⁻⁴