

Periodic Table of the Elements

Period	1	1s	1	1A	H hydrogen 1.008	2	IIA	2	VIII A	He helium 4.003																																								
	2	2s	3	+1	Li lithium 6.941	4	+2	Be beryllium 9.012	5	+3	B boron 10.81	6	-4	C carbon 12.01	7	-3	N nitrogen 14.01	8	-2	O oxygen 16.00	9	-1	F fluorine 19.00	10	Ne neon 20.18																									
	3	3s	11	+1	Na sodium 22.99	12	+2	Mg magnesium 24.31	13	+3	Al aluminum 26.98	14	-4	Si silicon 28.09	15	-3	P phosphorus 30.97	16	-2	S sulfur 32.07	17	-1	Cl chlorine 35.45	18	Ar argon 39.95																									
	4	4s	19	+1	K potassium 39.10	20	+2	Ca calcium 40.08	21	+3	Sc scandium 44.96	22	+4,3,2	Ti titanium 47.87	23	+5,2,3,4	V vanadium 50.94	24	+3,2,6	Cr chromium 52.00	25	+2,3,4,6,7	Mn manganese 54.94	26	+3,2	Fe iron 55.85	27	+2,3	Co cobalt 58.93	28	+2,3	Ni nickel 58.69	29	+2,1	Cu copper 63.55	30	+2	Zn zinc 65.41												
	5	5s	37	+1	Rb rubidium 85.47	38	+2	Sr strontium 87.62	39	+3	Y yttrium 88.91	40	+4	Zr zirconium 91.22	41	+5,3	Nb niobium 92.91	42	+6,3,5	Mo molybdenum 95.94	43	+7,4,6	Tc technetium 98	44	+4,3,6,8	Ru ruthenium 101.1	45	+3,4,6	Rh rhodium 102.9	46	+2,4	Pd palladium 106.4	47	+1	Ag silver 107.9	48	+2	Cd cadmium 112.4												
	6	6s	55	+1	Cs cesium 132.9	56	+2	Ba barium 137.3	57	+3	La lanthanum 138.9	58	+3,4	Ce cerium 140.1	59	+3,4	Pr praseodymium 140.9	60	+3	Nd neodymium 144.2	61	+3	Pm promethium 145	62	+3,2	Sm samarium 150.4	63	+3,2	Eu europium 152.0	64	+3	Gd gadolinium 157.3	65	+3,4	Tb terbium 158.9	66	+3	Dy dysprosium 162.5	67	+3	Ho holmium 164.9	68	+3	Er erbium 167.3	69	+3,2	Tm thulium 168.9	70	+3,2	Yb ytterbium 173.0
	7	7s	87	+1	Fr francium 223	88	+2	Ra radium 226	89	+3	Ac actinium 227	90	+4	Th thorium 232.0	91	+5,4	Pa protactinium 231.0	92	+3,4,5	U uranium 238.0	93	+3,4,6	Np neptunium 237	94	+3,5,6	Pu plutonium 239	95	+3,4,5,6	Am americium 243	96	+3	Cm curium 247	97	+3,4	Bk berkelium 247	98	+3	Cf californium 251	99	+3	Es einsteinium 252	100	+3	Fm fermium 257	101	+3,2	Md mendelevium 258	102	+2,3	No nobelium 259

atomic # → 29
 atomic symbol → Cu
 English element name → copper
 ← ions commonly formed +2,1
 ← atomic mass (rounded) 63.55

Gases
 Liquids
 Solids

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