1	2	3	4	5	6	7	8	9

Table of Common Polyatomic Ions

acetate (ethanoate)	CH_3COO^-	chromate	CrO_4^{2-}	phosphate	PO_4^{3-}
ammonium	NH_4^+	dichromate	$Cr_2O_7^{2-}$	hydrogen phosphate	HPO_4^{2-}
benzoate	$C_6H_5COO^-$	cyanide	CN^-	dihydrogen phosphate	$H_2PO_4^-$
borate	BO_3^{3-}	hydroxide	OH^-	silicate	SiO_3^{2-}
carbide	C_2^{2-}	iodate	IO_3^-	sulfate	SO_4^{2-}
carbonate	CO_3^{2-}	nitrate	NO_3^-	hydrogen sulfate	HSO_4^-
hydrogen carbonate	HCO_3^-	nitrite	NO_2^-	sulfite	SO_3^{2-}
perchlorate	ClO_4^-	oxalate	$OOCCOO^{2-}$	hydrogen sulfite	HSO_3^-
chlorate	ClO_3^-	hydrogen oxalate	$HOOCCOO^-$	hydrogen sulfide	HS^-
chlorite	ClO_2^-	permanganate	MnO_4^-	thiocyanate	SCN^-
hypochlorite	OCl^- or ClO^-	peroxide	O_2^{2-}	thiosulfate	$S_2O_3^{2-}$
		persulfide	S_2^{2-}		

1 1.01 1+,1– 2.2 H hydrogen								
3 6.94 1+ 1.0 Li lithium	**4** 9.01 2+ 1.6 Be beryllium							
11 22.99 1+ 0.9 Na sodium	**12** 24.31 2+ 1.3 Mg magnesium							
19 39.10 1+ 0.8 K potassium	**20** 40.08 2+ 1.0 Ca calcium	**21** 44.96 3+ 1.4 Sc scandium	**22** 47.87 4+, 3+ 1.5 Ti titanium	**23** 50.94 5+, 4+ 1.6 V vanadium	**24** 52.00 3+, 2+ 1.7 Cr chromium	**25** 54.94 2+, 4+ 1.6 Mn manganese	**26** 55.85 3+, 2+ 1.8 Fe iron	**27** 58.93 2+, 3+ 1.9 Co cobalt
37 85.47 1+ 0.8 Rb rubidium	**38** 87.62 2+ 1.0 Sr strontium	**39** 88.91 3+ 1.2 Y yttrium	**40** 91.22 4+ 1.3 Zr zirconium	**41** 92.91 5+, 3+ 1.6 Nb niobium	**42** 95.94 6+ 2.2 Mo molybdenum	**43** (98) 7+ 2.1 Tc technetium	**44** 101.07 3+, 4+ 2.2 Ru ruthenium	**45** 102.91 3+ 2.3 Rh rhodium
55 132.91 1+ 0.8 Cs cesium	**56** 137.33 2+ 0.9 Ba barium	**57** 138.91 3+ 1.1 La lanthanum	**72** 178.49 4+ 1.3 Hf hafnium	**73** 180.95 5+ 1.5 Ta tantalum	**74** 183.84 6+ 1.7 W tungsten	**75** 186.21 7+ 1.9 Re rhenium	**76** 190.23 4+ 2.2 Os osmium	**77** 192.22 4+ 2.2 Ir iridium
87 (223) 1+ 0.7 Fr francium	**88** (226) 2+ 0.9 Ra radium	**89** (227) 3+ 1.1 Ac actinium	**104** (261) Rf rutherfordium	**105** (262) Db dubnium	**106** (266) Sg seaborgium	**107** (264) Bh bohrium	**108** (277) Hs hassium	**109** (268) Mt meitnerium

lanthanide and actinide series begin

58 140.12 3+ 1.1 Ce cerium	**59** 140.91 3+ 1.1 Pr praseodymium	**60** 144.24 3+ 1.1 Nd neodymium	**61** (145) 3+ — Pm promethium	**62** 150.36 3+, 2+ 1.2 Sm samarium
90 232.04 4+ 1.3 Th thorium	**91** 231.04 5+, 4+ 1.5 Pa protactinium	**92** 238.03 6+, 4+ 1.7 U uranium	**93** (237) 5+ 1.3 Np neptunium	**94** (244) 4+, 6+ 1.3 Pu plutonium

References

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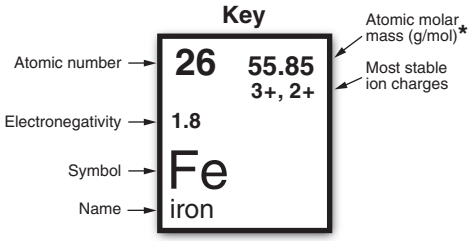
10	11	12	13	14	15	16	17	18

Legend for Elements

- Metallic solids
- Gases
- Non-metallic solids
- Liquids

Note: The legend denotes the physical state of the elements at exactly 101.325 kPa and 298.15 K.

Key



* Based on $^{12}_{6}C$
( ) Indicates mass of the most stable isotope

								2 4.00 — — He helium
			5 10.81 — 2.0 B boron	6 12.01 — 2.6 C carbon	7 14.01 — 3.0 N nitrogen	8 16.00 — 3.4 O oxygen	9 19.00 — 4.0 F fluorine	10 20.18 — — Ne neon
			13 26.98 3+ 1.6 Al aluminium	14 28.09 — 1.9 Si silicon	15 30.97 — 2.2 P phosphorus	16 32.07 — 2.6 S sulfur	17 35.45 — 3.2 Cl chlorine	18 39.95 — — Ar argon
28 58.69 2+, 3+ 1.9 Ni nickel	29 63.55 2+, 1+ 1.9 Cu copper	30 65.41 2+ 1.7 Zn zinc	31 69.72 3+ 1.8 Ga gallium	32 72.64 4+ 2.0 Ge germanium	33 74.92 — 2.2 As arsenic	34 78.96 — 2.6 Se selenium	35 79.90 — 3.0 Br bromine	36 83.80 — — Kr krypton
46 106.42 2+, 3+ 2.2 Pd palladium	47 107.87 1+ 1.9 Ag silver	48 112.41 2+ 1.7 Cd cadmium	49 114.82 3+ 1.8 In indium	50 118.71 4+, 2+ 2.0 Sn tin	51 121.76 3+, 5+ 2.1 Sb antimony	52 127.60 — 2.1 Te tellurium	53 126.90 — 2.7 I iodine	54 131.29 — 2.6 Xe xenon
78 195.08 4+, 2+ 2.2 Pt platinum	79 196.97 3+, 1+ 2.4 Au gold	80 200.59 2+, 1+ 1.9 Hg mercury	81 204.38 1+, 3+ 1.8 Tl thallium	82 207.2* 2+, 4+ 1.8 Pb lead	83 208.98 3+, 5+ 1.9 Bi bismuth	84 (209) 2+, 4+ 2.0 Po polonium	85 (210) — 2.2 At astatine	86 (222) — — Rn radon
110 (271) Ds darmstadtium	111 (272) Rg roentgenium							

* The isotopic mix of naturally occurring lead is more variable than other elements, preventing precision to greater than tenths of a gram per mole.

63 151.96 3+, 2+ — Eu europium	64 157.25 3+ 1.2 Gd gadolinium	65 158.93 3+ — Tb terbium	66 162.50 3+ 1.2 Dy dysprosium	67 164.93 3+ 1.2 Ho holmium	68 167.26 3+ 1.2 Er erbium	69 168.93 3+ 1.3 Tm thulium	70 173.04 3+, 2+ — Yb ytterbium	71 174.97 2+ 1.0 Lu lutetium
95 (243) 3+, 4+ — Am americium	96 (247) 3+ — Cm curium	97 (247) 3+, 4+ — Bk berkelium	98 (251) 3+ — Cf californium	99 (252) 3+ — Es einsteinium	100 (257) 3+ — Fm fermium	101 (258) 2+, 3+ — Md mendelevium	102 (259) 2+, 3+ — No nobelium	103 (262) 3+ — Lr lawrencium