

THE PERIODIC TABLE OF THE ELEMENTS

WITH NOMENCLATURE KEYS

18

monatomic ions

+1	+2
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1

IA

IA

1

H₂
hydrogen
1.008

2

IIA

IIA

Physical State: **gas**, **liquid**, **solid**, **man-made**

Key to writing and naming oxy-anions and oxy-acids

monatomic ions

+3	+/-4	-3	-2	-1
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VIIIA

2

13 IIIB IIIA	14 IVB IVA	15 VB VA	16 VIB VIA	17 VIIB VIIA	18 VIIIA 2
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He
helium
4.003

Use Roman Numeral for +chg

Exceptions: acetate (ethanoate) C₂H₃O₂¹⁻ or CH₃COO¹⁻; cyanide CN¹⁻; ammonium NH₄¹⁺; hydronium H₃O¹⁺; mercury(I) Hg₂²⁺; oxalate C₂O₄²⁻; hydroxide OH¹⁻; nitrate NO₃¹⁻; permanganate MnO₄¹⁻; peroxide O₂²⁻; chromate CrO₄²⁻; dichromate Cr₂O₇²⁻; thiocyanate SCN¹⁻; thiosulfate S₂O₃²⁻

3 Li lithium 6.941	4 Be beryllium 9.012											5 B boron 10.81	6 C carbon 12.01	7 N nitrogen 14.01	8 O oxygen 16.00	9 F fluorine 19.00	10 Ne neon 20.18
11 Na sodium 22.99	12 Mg magnesium 24.30	3 IIIA IIIB	4 IVA IVB	5 VA VB	6 VIA VIB	7 VIIA VIIB	8 VIII VIII	9 VIIIA VIII	10 IIIB IIIB	11 IB IB	12 IIB IIB	13 Al aluminum 26.98	14 Si silicon 28.09	15 P phosphorus 30.97	16 S sulfur 32.07	17 Cl chlorine 35.45	18 Ar argon 39.95
19 K potassium 39.10	20 Ca calcium 40.08	21 Sc scandium 44.96	22 Ti titanium 47.87	23 V vanadium 50.94	24 Cr chromium 52.00	25 Mn manganese 54.94	26 Fe iron 55.85	27 Co cobalt 58.93	28 Ni nickel 58.69	29 Cu copper 63.55	30 Zn zinc 65.39	31 Ga gallium 69.72	32 Ge germanium 72.61	33 As arsenic 74.92	34 Se selenium 78.96	35 Br bromine 79.90	36 Kr krypton 83.80
37 Rb rubidium 85.47	38 Sr strontium 87.62	39 Y yttrium 88.91	40 Zr zirconium 91.22	41 Nb niobium 92.91	42 Mo molybdenum 95.94	43 Tc technetium (98)	44 Ru ruthenium 101.1	45 Rh rhodium 102.9	46 Pd palladium 106.4	47 Ag silver 107.9	48 Cd cadmium 112.4	49 In indium 114.8	50 Sn tin 118.7	51 Sb antimony 121.8	52 Te tellurium 127.6	53 I iodine 126.9	54 Xe xenon 131.3
55 Cs cesium 132.9	56 Ba barium 137.3	57 La lanthanum 138.9	72 Hf hafnium 178.5	73 Ta tantalum 180.9	74 W wolfram tungsten 183.8	75 Re rhenium 186.2	76 Os osmium 190.2	77 Ir iridium 192.2	78 Pt platinum 195.1	79 Au gold 197.0	80 Hg mercury 200.6	81 Tl thallium 204.4	82 Pb lead 207.2	83 Bi bismuth 209.0	84 Po polonium (209)	85 At astatine (210)	86 Rn radon (222)
87 Fr francium (223)	88 Ra radium (226)	89 Ac actinium (227)	104 Rf rutherfordium (261)	105 Db dubnium (262)	106 Sg seaborgium (263)	107 Bh bohrium (262)	108 Hs hassium (265)	109 Mt meitnerium (266)	110 Ds darmstadtium (271)	111 Rg roentgenium (272)	112 Cp copernicium (277)	113 Uut (285)	114 Ff flerovium (289)	115 Uup (288)	116 Lv livermorium (293)	117 Uus (294)	118 Uuo (294)

3	3	4	4	3	#of O's in -ate ion (-ic acid)
3	2	3	2	1	neg chg in ion or H's in acid

The -ate ion leads to the -ic acid.		
The -ite ion leads to the -ous acid.		
per_ate	+1 O	per_ic acid
-ate	O's chart	-ic acid
-ite	-1 O	-ous acid
hypo_ite	-2 O's	hypo_ous acid
hydro_ic acids are binary - no O's		

58 Ce cerium 140.1	59 Pr praseodymium 140.9	60 Nd neodymium 144.2	61 Pm promethium (145)	62 Sm samarium 150.4	63 Eu europium 152.0	64 Gd gadolinium 157.2	65 Tb terbium 158.9	66 Dy dysprosium 162.5	67 Ho holmium 164.9	68 Er erbium 167.3	69 Tm thulium 168.9	70 Yb ytterbium 173.0	71 Lu lutetium 175.0
90 Th thorium 232.0	91 Pa protactinium 231.0	92 U uranium 238.0	93 Np neptunium (237)	94 Pu plutonium (244)	95 Am americium (243)	96 Cm curium (247)	97 Bk berkelium (247)	98 Cf californium (251)	99 Es einsteinium (252)	100 Fm fermium (257)	101 Md mendelevium (258)	102 No nobelium (259)	103 Lr lawrencium (260)

Greek Numerical Prefixes	
1 mono	6 hexa
2 di	7 hepta
3 tri	8 octa
4 tetra	9 nona
5 penta	10 deca