

1 (IA)	2 (IIA)	3 (IIIB)	4 (IVB)	5 (VB)	6 (VIB)	7 (VIIB)	8 ----- (VIII) -----	9 (IB)	10 (IIB)	11 (IIIB)	12 (IIIB)	13 (IIIA)	14 (IVA)	15 (VA)	16 (VIA)	17 (VIIA)	18 (VIIIA)																																																																	
1 <b>H</b> 1.00794*	2 <b>He</b> 4.00260	3 <b>Li</b> 6.941*	4 <b>Be</b> 9.01218	5 <b>Na</b> 22.9898	6 <b>Mg</b> 24.3050	7 <b>Al</b> 26.9815	8 <b>Si</b> 28.0855*	9 <b>P</b> 30.9738	10 <b>S</b> 32.065*	11 <b>Cl</b> 35.453*	12 <b>Ar</b> 39.948	13 <b>K</b> 39.0983	14 <b>Ca</b> 40.078	15 <b>Sc</b> 44.9559	16 <b>Ti</b> 47.867	17 <b>V</b> 50.9415	18 <b>Cr</b> 51.9961	19 <b>Mn</b> 54.9380	20 <b>Fe</b> 55.845	21 <b>Co</b> 58.9332	22 <b>Ni</b> 58.6934	23 <b>Cu</b> 63.546	24 <b>Zn</b> 65.38	25 <b>Ga</b> 69.723	26 <b>Ge</b> 72.63	27 <b>As</b> 74.9216	28 <b>Se</b> 78.96	29 <b>Br</b> 79.904	30 <b>Kr</b> 83.798	31 <b>Rb</b> 85.4678	32 <b>Sr</b> 87.62	33 <b>Y</b> 88.9059	34 <b>Zr</b> 91.224	35 <b>Nb</b> 92.9064	36 <b>Mo</b> 95.96	37 <b>Tc</b> [98]	38 <b>Ru</b> 101.07	39 <b>Rh</b> 102.906	40 <b>Pd</b> 106.42	41 <b>Ag</b> 107.868	42 <b>Cd</b> 112.411	43 <b>In</b> 114.818	44 <b>Sn</b> 118.710	45 <b>Sb</b> 121.760	46 <b>Te</b> 127.60	47 <b>I</b> 126.904	48 <b>Xe</b> 131.293	49 <b>Cs</b> 132.905	50 <b>Ba</b> 137.327	51 <b>La</b> 138.906	52 <b>Hf</b> 178.49	53 <b>Ta</b> 180.948	54 <b>W</b> 183.84	55 <b>Re</b> 186.207	56 <b>Os</b> 190.23	57 <b>Ir</b> 192.217	58 <b>Pt</b> 195.078	59 <b>Au</b> 196.967	60 <b>Hg</b> 200.59	61 <b>Tl</b> 204.383*	62 <b>Pb</b> 207.2	63 <b>Bi</b> 208.980	64 <b>Po</b> [209]	65 <b>At</b> [210]	66 <b>Rn</b> [222]	67 <b>Fr</b> [223]	68 <b>Ra</b> [226]	69 <b>Ac</b> [227]	70 <b>Rf</b> [261]	71 <b>Db</b> [262]	72 <b>Sg</b> [263]	73 <b>Bh</b> [262]	74 <b>Hs</b> [265]	75 <b>Mt</b> [266]	76 <b>Ds</b> [281]	77 <b>Rg</b> [281]	78 <b>Cn</b> [285]	79 <b>Fl</b> [289]	80 <b>Mc</b> [289]	81 <b>Lv</b> [292]	82 <b>Ts</b> [294]	83 <b>Og</b> [294]

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**THE PERIODIC TABLE  
OF THE ELEMENTS**

UPDATED 11/2016

Note: The IUPAC has assigned each of the ten elements marked with asterisks a range of atomic mass values instead of the solitary value listed in this table. The exact values of those ranges are available at IUPAC.org.

Lanthanoids	★	58 <b>Ce</b> 140.116	59 <b>Pr</b> 140.908	60 <b>Nd</b> 144.24	61 <b>Pm</b> [145]	62 <b>Sm</b> 150.36	63 <b>Eu</b> 151.964	64 <b>Gd</b> 157.25	65 <b>Tb</b> 158.925	66 <b>Dy</b> 162.500	67 <b>Ho</b> 164.930	68 <b>Er</b> 167.259	69 <b>Tm</b> 168.934	70 <b>Yb</b> 173.1	71 <b>Lu</b> 174.967	
	Actinoids	★	90 <b>Th</b> 232.038	91 <b>Pa</b> 231.036	92 <b>U</b> 238.029	93 <b>Np</b> [237]	94 <b>Pu</b> [244]	95 <b>Am</b> [243]	96 <b>Cm</b> [247]	97 <b>Bk</b> [247]	98 <b>Cf</b> [251]	99 <b>Es</b> [252]	100 <b>Fm</b> [257]	101 <b>Md</b> [258]	102 <b>No</b> [259]	103 <b>Lr</b> [262]

<i>cations of interest</i>	
Bismuth(III) or bismuthous	<b>Bi</b> <sup>3+</sup>
Bismuth(V) or bismuthic	<b>Bi</b> <sup>5+</sup>
Cadmium	<b>Cd</b> <sup>2+</sup>
Chromium(II) or chromous	<b>Cr</b> <sup>2+</sup>
Chromium(III) or chromic	<b>Cr</b> <sup>3+</sup>
Chromium(VI)	<b>Cr</b> <sup>6+</sup>
Cobalt(II) or cobaltous	<b>Co</b> <sup>2+</sup>
Cobalt(III) or cobaltic	<b>Co</b> <sup>3+</sup>
Copper(I) or cuprous	<b>Cu</b> <sup>+</sup>
Copper(II) or cupric	<b>Cu</b> <sup>2+</sup>
Gold(I) or aurous	<b>Au</b> <sup>+</sup>
Gold(III) or auric	<b>Au</b> <sup>3+</sup>
Iron(II) or ferrous	<b>Fe</b> <sup>2+</sup>
Iron(III) or ferric	<b>Fe</b> <sup>3+</sup>
Lead(II) or plumbous	<b>Pb</b> <sup>2+</sup>
Lead(IV) or plumbic	<b>Pb</b> <sup>4+</sup>
Manganese(II) or manganous	<b>Mn</b> <sup>2+</sup>
Manganese(IV) or manganic	<b>Mn</b> <sup>4+</sup>
Mercury(I) or mercurous	<b>Hg</b> <sub>2</sub> <sup>2+</sup>
Mercury(II) or mercuric	<b>Hg</b> <sup>2+</sup>
Nickel(II) or nickelous	<b>Ni</b> <sup>2+</sup>
Nickel(III) or nickelic	<b>Ni</b> <sup>3+</sup>
Silver	<b>Ag</b> <sup>+</sup>
Thallium(I) or thallos	<b>Tl</b> <sup>+</sup>
Thallium(III) or thallic	<b>Tl</b> <sup>3+</sup>
Tin(II) or stannous	<b>Sn</b> <sup>2+</sup>
Tin(IV) or stannic	<b>Sn</b> <sup>4+</sup>
Titanium(II)	<b>Ti</b> <sup>2+</sup>
Titanium(III) or titanous	<b>Ti</b> <sup>3+</sup>
Titanium(IV) or titanic	<b>Ti</b> <sup>4+</sup>
Zinc	<b>Zn</b> <sup>2+</sup>

## HELPFUL INFORMATION

<i>common polyatomics</i>	
Ammonium	<b>NH</b> <sub>4</sub> <sup>+</sup>
Hydronium	<b>H</b> <sub>3</sub> <b>O</b> <sup>+</sup>
Acetate	<b>C</b> <sub>2</sub> <b>H</b> <sub>3</sub> <b>O</b> <sub>2</sub> <sup>-</sup>
Arsenate	<b>AsO</b> <sub>4</sub> <sup>3-</sup>
Bicarbonate (hydrogen carbonate)	<b>HCO</b> <sub>3</sub> <sup>-</sup>
Borate	<b>BO</b> <sub>3</sub> <sup>3-</sup>
Bromate	<b>BrO</b> <sub>3</sub> <sup>-</sup>
Carbonate	<b>CO</b> <sub>3</sub> <sup>2-</sup>
Chlorate	<b>ClO</b> <sub>3</sub> <sup>-</sup>
Chromate	<b>CrO</b> <sub>4</sub> <sup>2-</sup>
Cyanate	<b>CNO</b> <sup>-</sup>
Cyanide	<b>CN</b> <sup>-</sup>
Dichromate	<b>Cr</b> <sub>2</sub> <b>O</b> <sub>7</sub> <sup>2-</sup>
Hydroxide	<b>OH</b> <sup>-</sup>
Iodate	<b>IO</b> <sub>3</sub> <sup>-</sup>
Nitrate	<b>NO</b> <sub>3</sub> <sup>-</sup>
Oxalate	<b>C</b> <sub>2</sub> <b>O</b> <sub>4</sub> <sup>2-</sup>
Permanganate	<b>MnO</b> <sub>4</sub> <sup>-</sup>
Peroxide	<b>O</b> <sub>2</sub> <sup>2-</sup>
Phosphate	<b>PO</b> <sub>4</sub> <sup>3-</sup>
Sulfate	<b>SO</b> <sub>4</sub> <sup>2-</sup>
Thiocyanate	<b>SCN</b> <sup>-</sup>
Thiosulfate	<b>S</b> <sub>2</sub> <b>O</b> <sub>3</sub> <sup>2-</sup>

### CHANGE # OF OXYGEN? CHANGE NAME...

per - ate	<b>MO</b> <sub>(y+1)</sub> <sup>x-</sup>
- ate	<b>MO</b> <sub>y</sub> <sup>x-</sup>
- ite	<b>MO</b> <sub>(y-1)</sub> <sup>x-</sup>
hypo - ite	<b>MO</b> <sub>(y-2)</sub> <sup>x-</sup>

*"The best way out is always through." ~ Robert Frost*