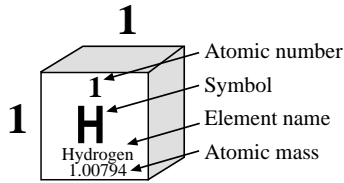


Appendices

Periodic Table



The Periodic

2

3

4

5

6

7

Metallic Properties

Transition Elements

	3	4							
2	Li Lithium 6.941	Be Beryllium 9.01218							
3	11 Na Sodium 22.98977	12 Mg Magnesium 24.305	3	4	5	6	7	8	9
4	19 K Potassium 39.0983	20 Ca Calcium 40.078	21 Sc Scandium 44.95591	22 Ti Titanium 47.88	23 V Vanadium 50.9415	24 Cr Chromium 51.9961	25 Mn Manganese 54.9380	26 Fe Iron 55.847	27 Co Cobalt 58.9332
5	37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.9059	40 Zr Zirconium 91.224	41 Nb Niobium 92.9064	42 Mo Molybdenum 95.94	43 Tc Technetium 97.9072*	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.9055
6	55 Cs Cesium 132.9054	56 Ba Barium 137.33	71 Lu Lutetium 174.967	72 Hf Hafnium 178.49	73 Ta Tantalum 180.9479	74 W Tungsten 183.85	75 Re Rhenium 186.207	76 Os Osmium 190.2	77 Ir Iridium 192.22
7	87 Fr Francium 223.0197*	88 Ra Radium 226.0254	103 Lr Lawrencium 260.1054*	104 Rf Rutherfordium 261*	105 Ha Hahnium 262*	106 Sg Seaborgium 263*	107 Bh Bohrium (262)	108 Hs Hassium (265)	109 Mt Meitnerium (266)

Metallic Properties

* Mass of isotope with longest half-life, that is, the most stable isotope of the element

Lanthanoid Series

Actinoid Series

Rare Earth Elements

57 La Lanthanum 138.9055	58 Ce Cerium 140.12	59 Pr Praseodymium	60 Nd Neodymium 144.24	61 Pm Promethium 144.9128*	62 Sm Samarium 150.36
89 Ac Actinium 227.0278*	90 Th Thorium 232.0381	91 Pa Protactinium 231.0359*	92 U Uranium 238.0289	93 Np Neptunium 237.0482	94 Pu Plutonium 244.0642*

Table

Noble Gases
18

			13	14	15	16	17	18	
			5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.0067	8 O Oxygen 15.9994	9 F Fluorine 18.998403	10 Ne Neon 20.179	
	10	11	12	13 Al Aluminum 26.98154	14 Si Silicon 28.0855	15 P Phosphorus 30.97376	16 S Sulfur 32.06	17 Cl Chlorine 35.453	18 Ar Argon 39.948
28 Ni Nickel 58.69	29 Cu Copper 63.546	30 Zn Zinc 65.39	31 Ga Gallium 69.723	32 Ge Germanium 72.59	33 As Arsenic 74.9216	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.80	
46 Pd Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.710	51 Sb Antimony 121.75	52 Te Tellurium 127.60	53 I Iodine 126.9045	54 Xe Xenon 131.29	
89 Pt Platinum 195.08	79 Au Gold 196.9665	80 Hg Mercury 200.59	81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.9804	84 Po Polonium 208.9824*	85 At Astatine 209.98712*	86 Rn Radon 222.017*	
110 § Uun Ununilium 269*	111 § Uuu Unununium 272*	112 § Uub Ununbium 277*	113 §	114 §	115 §	116 §	117 §	118 §	

Nonmetallic Properties ↑

← Metallic Properties

63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.9254	66 Dy Dysprosium 162.50	67 Ho Holmium 164.9304	68 Er Erbium 167.26	69 Tm Thulium 168.9342	70 Yb Ytterbium 173.04
95 Am Americium 243.0614*	96 Cm Curium 247.0703*	97 Bk Berkelium 247.0703*	98 Cf Californium 251.0796*	99 Es Einsteinium 252.0828*	100 Fm Fermium 257.0951*	101 Md Mendelevium 258.986*	102 No Nobelium 259.1009*

§ Synthesized elements that are highly unstable. Research on these is continuing and may change what we know about them.

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