

Refractory Metals

Hydrogen *** H 1.008 1																	Helium *** He 4.003 2						
Lithium * Li 6.941 3	Beryllium * Be 9.012 4																	Boron * B 10.81 5	Carbon * C 12.01 6	Nitrogen * N 14.01 7	Oxygen *** O 16.00 8	Fluorine *** F 19.00 9	Neon *** Ne 20.18 10
Sodium * Na 22.99 11	Magnesium * Mg 24.31 12																	Aluminum * Al 26.98 13	Silicon * Si 28.09 14	Phosphorus * P 30.97 15	Sulfur * S 32.07 16	Chlorine *** Cl 35.45 17	Argon *** Ar 39.95 18
Potassium * K 39.10 19	Calcium * Ca 40.08 20	Scandium * Sc 44.96 21	Titanium * Ti 47.87 22	Vanadium * V 50.94 23	Chromium * Cr 52.00 24	Manganese * Mn 54.94 25	Iron * Fe 55.85 26	Cobalt * Co 58.93 27	Nickel * Ni 58.69 28	Copper * Cu 63.55 29	Zinc * Zn 65.39 30	Gallium * Ga 69.72 31	Germanium * Ge 72.63 32	Arsenic * As 74.92 33	Selenium * Se 78.96 34	Bromine *** Br 79.90 35	Krypton *** Kr 83.80 36						
Rubidium * Rb 85.47 37	Sr 87.62 38	Yttrium * Y 88.91 39	Zirconium * Zr 91.22 40	Niobium * Nb 92.91 41	Molybdenum * Mo 95.94 42	Technetium * Tc 98.91 43	Ruthenium * Ru 101.07 44	Rhodium * Rh 102.91 45	Palladium * Pd 106.42 46	Silver * Ag 107.87 47	Cadmium * Cd 112.41 48	Indium * In 114.82 49	Tin * Sn 118.71 50	Antimony * Sb 121.76 51	Tellurium * Te 127.60 52	Iodine *** I 126.90 53	Xenon *** Xe 131.29 54						
Cesium * Cs 132.91 55	Barium * Ba 137.33 56	LANTHANIDES ▼	Hafnium * Hf 178.49 72	Tantalum * Ta 180.95 73	Tungsten * W 183.84 74	Rhenium * Re 186.21 75	Osmium * Os 190.23 76	Iridium * Ir 192.22 77	Platinum * Pt 195.08 78	Gold * Au 196.97 79	Mercury *** Hg 200.59 80	Thallium * Tl 204.38 81	Lead * Pb 207.2 82	Bismuth * Bi 208.98 83	Polonium *** Po [209] 84	Astatine *** At [210] 85	Radon *** Rn [222] 86						
Francium * Fr [223] 87	Radium * Ra [226] 88	ACTINIDES ▼	Rutherfordium *** Rf [261] 104	Dubnium *** Db [268] 105	Seaborgium *** Sg [269] 106	Bohrium *** Bh [270] 107	Hassium *** Hs [271] 108	Mt [278] 109	Darmstadtium *** Ds [281] 110	Roentgenium *** Rg [281] 111	Copernicium *** Cn [285] 112	Ununtrium *** Uut [286] 113	Flerovium *** Fl [289] 114	Ununpentium *** Uup [289] 115	Livermorium *** Lv [293] 116	Ununseptium *** Uus [294] 117	Ununoctium *** Uuo [294] 118						

Lanthanum * La 138.91 57	Cerium * Ce 140.12 58	Praseodymium * Pr 140.91 59	Neodymium * Nd 144.24 60	Promethium * Pm [145] 61	Samarium * Sm 150.36 62	Europium * Eu 151.96 63	Gadolinium * Gd 157.25 64	Terbium * Tb 158.93 65	Dysprosium * Dy 162.50 66	Holmium * Ho 164.93 67	Erbium * Er 167.26 68	Thulium * Tm 168.93 69	Ytterbium * Yb 173.04 70	Lutetium * Lu 174.97 71
Actinium * Ac [227] 89	Thorium * Th 232.04 90	Protactinium * Pa 231.04 91	Uranium * U 238.03 92	Neptunium * Np [237] 93	Plutonium * Pu [244] 94	Americium * Am [243] 95	Curium * Cm [247] 96	Berkelium * Bk [247] 97	Californium * Cf [251] 98	Einsteinium * Es [252] 99	Fermium * Fm [257] 100	Mendelevium * Md [258] 101	Nobelium * No [259] 102	Lawrencium * Lr [262] 103

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