

Periodic Table of the Elements

Group		1																18	
Period		1	2															1	2
1		1.008 1312.0 2.20 1 H Hydrogen 1s ¹																4.0026 2372.3 1s ²	He Helium
2		6.94 520.2 0.98 3 Li Lithium 1s ² 2s ¹	9.0122 899.5 1.57 4 Be Beryllium 1s ² 2s ²															18.998 1681.0 3.98 9 F Fluorine 1s ² 2s ² 2p ⁵	20.180 2080.7 1s ² 2s ² 2p ⁶
3		22.990 495.8 0.93 11 Na Sodium (Ne) 3s ¹	24.305 737.7 1.31 12 Mg Magnesium (Ne) 3s ²															35.45 1251.2 3.16 17 Cl Chlorine (Ne) 3s ² 3p ⁵	39.95 1520.6 1s ² 3s ² 3p ⁴
4		39.098 418.8 0.82 19 K Potassium (Ar) 4s ¹	40.078 589.8 1.00 20 Ca Calcium (Ar) 4s ²															79.904 1139.9 2.96 35 Br Bromine (Ar) 3d ¹⁰ 4s ² 4p ⁵	83.798 1350.8 3.00 36 Kr Krypton (Ar) 3d ¹⁰ 4s ² 4p ⁶
5		85.468 403.0 0.82 37 Rb Rubidium (Kr) 5s ¹	87.62 549.5 0.95 38 Sr Strontium (Kr) 5s ²															126.90 1008.4 2.66 53 I Iodine (Kr) 4d ¹⁰ 5s ² 5p ⁵	131.29 1170.4 2.60 54 Xe Xenon (Kr) 4d ¹⁰ 5s ² 5p ⁶
6		132.91 375.7 0.79 55 Cs Caesium (Xe) 6s ¹	137.33 502.9 0.89 56 Ba Barium (Xe) 6s ²															(209) 812.1 2.00 84 Po Polonium (Xe) 4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁴	(222) 1037.0 1s ²
7		(223) 380.0 0.70 87 Fr Francium (Rn) 7s ¹	(226) 509.3 0.90 88 Ra Radium (Rn) 7s ²															(294) 117 118 Og Oganesson (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁶	

standard atomic weight
or most stable mass number

1st ionization energy
in kJ/mol

chemical symbol

name

electron configuration

radioactive elements have
masses in parenthesis

55.845

26

Fe

Iron

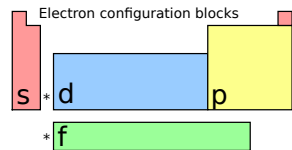
[Ar] 3d⁶ 4s²

atomic number

electronegativity

oxidation states
most common are bold

3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
44.956 633.1 1.36 21 Sc Scandium (Ar) 3d ¹ 4s ²	47.867 633.1 1.36 22 Ti Titanium (Ar) 3d ² 4s ²	50.942 650.9 1.63 23 V Vanadium (Ar) 3d ³ 4s ²	51.996 650.9 1.66 24 Cr Chromium (Ar) 3d ⁵ 4s ¹	54.938 711.3 1.55 25 Mn Manganese (Ar) 3d ⁵ 4s ²	55.845 762.5 1.83 26 Fe Iron (Ar) 3d ⁶ 4s ²	58.933 760.4 1.91 27 Co Cobalt (Ar) 3d ⁷ 4s ²	58.693 737.1 1.88 28 Ni Nickel (Ar) 3d ⁸ 4s ²	63.546 745.5 1.90 29 Cu Copper (Ar) 3d ¹⁰ 4s ¹	65.38 906.4 1.65 30 Zn Zinc (Kr) 3d ¹⁰ 4s ²	69.723 578.8 1.81 31 Ga Gallium (Kr) 3d ¹⁰ 4s ² 4p ¹	72.630 762.0 2.01 32 Ge Germanium (Kr) 3d ¹⁰ 4s ² 4p ²	74.922 947.0 2.18 33 As Arsenic (Kr) 3d ¹⁰ 4s ² 4p ³	78.971 941.0 2.55 34 Se Selenium (Ar) 3d ¹⁰ 4s ² 4p ⁴	79.904 1139.9 2.96 35 Br Bromine (Ar) 3d ¹⁰ 4s ² 4p ⁵	83.798 1350.8 3.00 36 Kr Krypton (Ar) 3d ¹⁰ 4s ² 4p ⁶
88.906 600.0 1.22 39 Y Yttrium (Kr) 4d ¹ 5s ²	91.222 640.1 1.33 40 Zr Zirconium (Kr) 4d ² 5s ²	92.906 652.1 1.60 41 Nb Niobium (Kr) 4d ⁴ 5s ¹	95.95 684.3 2.16 42 Mo Molybdenum (Kr) 4d ⁵ 5s ¹	(97) 702.0 1.90 43 Tc Technetium (Kr) 4d ⁵ 5s ²	101.07 710.2 2.20 44 Ru Ruthenium (Kr) 4d ⁷ 5s ¹	102.91 719.7 2.28 45 Rh Rhodium (Kr) 4d ⁸ 5s ¹	106.42 804.4 2.20 46 Pd Palladium (Kr) 4d ¹⁰ 5s ⁰	107.87 731.0 1.93 47 Ag Silver (Kr) 4d ¹⁰ 5s ¹	112.41 867.8 1.69 48 Cd Cadmium (Kr) 4d ¹⁰ 5s ²	114.82 558.3 1.78 49 In Indium (Kr) 4d ¹⁰ 5s ² 5p ¹	118.71 708.6 1.96 50 Sn Tin (Kr) 4d ¹⁰ 5s ² 5p ²	121.76 834.0 2.05 51 Sb Antimony (Kr) 4d ¹⁰ 5s ² 5p ³	127.60 869.3 2.10 52 Te Tellurium (Kr) 4d ¹⁰ 5s ² 5p ⁴	126.90 1008.4 2.66 53 I Iodine (Kr) 4d ¹⁰ 5s ² 5p ⁵	131.29 1170.4 2.60 54 Xe Xenon (Kr) 4d ¹⁰ 5s ² 5p ⁶
174.97 523.5 1.27 71 Lu Lutetium (Xe) 4f ¹⁴ 5d ¹ 6s ²	178.49 658.5 1.30 72 Hf Hafnium (Xe) 4f ¹⁴ 5d ² 6s ²	180.95 761.0 1.50 73 Ta Tantalum (Xe) 4f ¹⁴ 5d ³ 6s ²	183.84 770.0 2.36 74 W Tungsten (Xe) 4f ¹⁴ 5d ⁴ 6s ²	186.21 760.0 1.90 75 Re Rhenium (Xe) 4f ¹⁴ 5d ⁵ 6s ²	190.23 840.0 2.20 76 Os Osmium (Xe) 4f ¹⁴ 5d ⁶ 6s ²	192.22 880.0 2.20 77 Ir Iridium (Xe) 4f ¹⁴ 5d ⁷ 6s ²	195.08 870.0 2.28 78 Pt Platinum (Xe) 4f ¹⁴ 5d ⁹ 6s ¹	196.97 890.1 2.54 79 Au Gold (Xe) 4f ¹⁴ 5d ¹⁰ 6s ¹	200.59 1007.1 2.00 80 Hg Mercury (Xe) 4f ¹⁴ 5d ¹⁰ 6s ²	204.38 589.4 1.62 81 Tl Thallium (Xe) 4f ¹⁴ 5d ¹⁰ 6s ² 6p ¹	207.2 715.6 2.33 82 Pb Lead (Xe) 4f ¹⁴ 5d ¹⁰ 6s ² 6p ²	208.98 703.0 2.02 83 Bi Bismuth (Xe) 4f ¹⁴ 5d ¹⁰ 6s ² 6p ³	(209) 812.1 2.00 84 Po Polonium (Xe) 4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁴	(210) 890.0 2.20 85 At Astatine (Xe) 4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁵	(222) 1037.0 1s ²
(266) 470.0 1.03 103 Lr Lawrencium (Rn) 5f ¹⁴ 6d ¹ 7s ²	(268) 580.0 1.04 104 Rf Rutherfordium (Rn) 5f ¹⁴ 6d ² 7s ²	(268) 580.0 1.05 105 Db Dubnium (Rn) 5f ¹⁴ 6d ³ 7s ²	(269) 580.0 1.06 106 Sg Seaborgium (Rn) 5f ¹⁴ 6d ⁴ 7s ²	(270) 580.0 1.07 107 Bh Bohrium (Rn) 5f ¹⁴ 6d ⁵ 7s ²	(271) 580.0 1.08 108 Hs Hassium (Rn) 5f ¹⁴ 6d ⁶ 7s ²	(278) 580.0 1.09 109 Mt Meitnerium (Rn) 5f ¹⁴ 6d ⁷ 7s ²	(281) 580.0 1.10 110 Ds Darmstadtium (Rn) 5f ¹⁴ 6d ⁸ 7s ²	(282) 580.0 1.11 111 Rg Roentgenium (Rn) 5f ¹⁴ 6d ⁹ 7s ²	(285) 580.0 1.12 112 Cn Copernicium (Rn) 5f ¹⁴ 6d ¹⁰ 7s ²	(286) 580.0 1.13 113 Nh Nihonium (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ¹	(289) 580.0 1.14 114 Fl Flerovium (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ²	(290) 580.0 1.15 115 Mc Moscovium (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ³	(293) 580.0 1.16 116 Lv Livermorium (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁴	(294) 580.0 1.17 117 Ts Tennessine (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁵	(294) 580.0 1.18 118 Og Oganesson (Rn) 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁶



Notes

- 1 kJ/mol ≈ 0.0103636 eV
- all elements are implied to have an oxidation state of zero.

by Robert Campion / updated 2016, 2018

alkali metals

alkaline earth metals

lanthanides

actinides

transition metals

unknown properties

post-transition metals

metalloids

reactive nonmetals

noble gases