

PERIODIC TABLE

Atomic Properties of the Elements

Group																18 VIIIA	
1 IA																2 IIA	
1 H Hydrogen 1.00794 1s 13.5984																2 He Helium 4.002602 1s ² 24.5874	
2 Li Lithium 6.941 1s ² 2s 5.3917	3 Be Beryllium 9.012182 1s ² 2s ² 9.3227															7 N Nitrogen 14.0067 1s ² 2s ² 2p ³ 11.2603	8 O Oxygen 15.9994 1s ² 2s ² 2p ⁴ 13.6181
3 Na Sodium 22.989770 [Ne]3s 5.1391	4 Mg Magnesium 24.3050 [Ne]3s ² 7.6462															15 P Phosphorus 30.973761 [Ne]3s ² 3p ³ 10.4867	16 S Sulfur 32.065 [Ne]3s ² 3p ⁴ 10.3600
4 K Potassium 39.0983 [Ar]4s 4.3407	5 Ca Calcium 40.078 [Ar]3d ⁴ 6.1132	6 Sc Scandium 44.955910 [Ar]3d ⁴ 6.5615	7 Ti Titanium 47.867 [Ar]3d ³ 4s ² 6.8281	8 V Vanadium 50.9415 [Ar]3d ³ 4s ² 6.7462	9 Cr Chromium 51.9961 [Ar]3d ⁵ 4s 7.4340	10 Mn Manganese 54.938049 [Ar]3d ⁵ 4s ² 7.4340	11 Fe Iron 55.845 [Ar]3d ⁶ 4s ² 7.9024	12 Co Cobalt 58.933200 [Ar]3d ⁷ 4s ² 7.8810	13 Ni Nickel 58.6934 [Ar]3d ⁸ 4s ² 7.6398	14 Cu Copper 63.546 [Ar]3d ¹⁰ 4s 7.7264	15 Zn Zinc 65.409 [Ar]3d ¹⁰ 4s ² 9.3942	16 Ga Gallium 69.723 [Ar]3d ¹⁰ 4s ² 4p 5.9993	17 Ge Germanium 72.64 [Ar]3d ¹⁰ 4s ² 4p ² 7.8994	18 As Arsenic 74.92160 [Ar]3d ¹⁰ 4s ² 4p ³ 9.7886	19 Se Selenium 78.96 [Ar]3d ¹⁰ 4s ² 4p ⁴ 9.7524	20 Br Bromine 79.904 [Ar]3d ¹⁰ 4s ² 4p ⁵ 11.8138	21 Kr Krypton 83.798 [Ar]3d ¹⁰ 4s ² 4p ⁶ 13.9996
5 Rb Rubidium 85.4678 [Kr]5s 4.1771	6 Sr Strontium 87.62 [Kr]5s ² 5.6949	7 Y Yttrium 88.90585 [Kr]4d ⁵ 6.2173	8 Zr Zirconium 91.224 [Kr]4d ⁵ 5s ² 6.6339	9 Nb Niobium 92.90638 [Kr]4d ⁵ 5s 6.7589	10 Mo Molybdenum 95.94 [Kr]4d ⁵ 5s 7.0924	11 Tc Technetium (98) [Kr]4d ⁵ 5s ² 7.28	12 Ru Ruthenium 101.07 [Kr]4d ⁷ 5s 7.3605	13 Rh Rhodium 102.90550 [Kr]4d ⁸ 5s 7.4589	14 Pd Palladium 106.42 [Kr]4d ¹⁰ 8.3369	15 Ag Silver 107.8682 [Kr]4d ¹⁰ 5s 7.5762	16 Cd Cadmium 112.411 [Kr]4d ¹⁰ 5s ² 8.9938	17 In Indium 114.818 [Kr]4d ¹⁰ 5s ² 5p 5.7864	18 Sn Tin 118.710 [Kr]4d ¹⁰ 5s ² 5p ² 7.3439	19 Sb Antimony 121.760 [Kr]4d ¹⁰ 5s ² 5p ³ 8.6084	20 Te Tellurium 127.60 [Kr]4d ¹⁰ 5s ² 5p ⁴ 9.0096	21 I Iodine 126.90447 [Kr]4d ¹⁰ 5s ² 5p ⁵ 10.4513	22 Xe Xenon 131.293 [Kr]4d ¹⁰ 5s ² 5p ⁶ 12.1298
6 Cs Cesium 132.90545 [Xe]6s 3.8939	7 Ba Barium 137.327 [Xe]6s ² 5.2117															23 Hf Hafnium 178.49 [Xe]4f ¹⁴ 5d ² 6s ² 6.8251	24 Ta Tantalum 180.9479 [Xe]4f ¹⁴ 5d ³ 6s ² 7.5496
7 Fr Francium (223) [Rn]7s 4.0727	8 Ra Radium (226) [Rn]7s ² 5.2784															25 W Tungsten 183.84 [Xe]4f ¹⁴ 5d ⁴ 6s ² 7.8640	26 Re Rhenium 186.207 [Xe]4f ¹⁴ 5d ⁵ 6s ² 7.8335
																27 Os Osmium 190.23 [Xe]4f ¹⁴ 5d ⁶ 6s ² 8.4382	28 Ir Iridium 192.217 [Xe]4f ¹⁴ 5d ⁷ 6s ² 8.9670
																29 Pt Platinum 195.078 [Xe]4f ¹⁴ 5d ⁹ 6s 8.9588	30 Au Gold 196.96655 [Xe]4f ¹⁴ 5d ¹⁰ 6s 9.2255
																31 Hg Mercury 200.59 [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 10.4375	32 Tl Thallium 204.3833 [Hg]6p 6.1082
																33 Pb Lead 207.2 [Hg]6p ² 7.4167	34 Bi Bismuth 208.98038 [Hg]6p ³ 7.2855
																35 Po Polonium (209) [Hg]6p ⁴ 8.414	36 At Astatine (210) [Hg]6p ⁵ 8.414
																37 Rn Radon (222) [Hg]6p ⁶ 10.7485	38 Rn Radon (222) [Hg]6p ⁶ 10.7485
																39 Uup Ununpentium (289) [Og]6p ³ 6.2817	40 Uuq Ununquadium (292) [Og]6p ⁴ 6.58
																41 Uut Ununtrium (294) [Og]6p ⁵ 6.58	42 Uuh Ununhexium (297) [Og]6p ⁶ 6.58
																43 Uus Ununseptium (300) [Og]6p ⁷ 6.58	44 Uuo Ununoctium (304) [Og]6p ⁸ 6.58
																45 Lr Lawrencium (262) [Og]5f ¹⁴ 7s ² 7p ^{1/2} 4.9 ?	46 Lr Lawrencium (262) [Og]5f ¹⁴ 7s ² 7p ^{1/2} 4.9 ?
																47 La Lanthanum 138.9055 [Xe]5d ¹ 6s ² 5.5769	48 Ce Cerium 140.116 [Xe]4f ¹ 5d ¹ 6s ² 5.5387
																49 Pr Praseodymium 140.90765 [Xe]4f ² 6s ² 5.473	50 Nd Neodymium 144.24 [Xe]4f ³ 6s ² 5.5250
																51 Pm Promethium (145) [Xe]4f ⁴ 6s ² 5.582	52 Sm Samarium 150.36 [Xe]4f ⁵ 6s ² 5.6437
																53 Eu Europium 151.964 [Xe]4f ⁶ 6s ² 5.6704	54 Gd Gadolinium 157.25 [Xe]4f ⁷ 6s ² 6.1498
																55 Tb Terbium 158.92534 [Xe]4f ⁸ 6s ² 5.8638	56 Dy Dysprosium 162.500 [Xe]4f ⁹ 6s ² 5.9389
																57 Ho Holmium 164.93032 [Xe]4f ¹⁰ 6s ² 6.0215	58 Er Erbium 167.259 [Xe]4f ¹¹ 6s ² 6.1077
																59 Tm Thulium 168.93421 [Xe]4f ¹² 6s ² 6.1843	60 Yb Ytterbium 173.04 [Xe]4f ¹³ 6s ² 6.2542
																61 Lu Lutetium 174.967 [Xe]4f ¹⁴ 5d ¹ 6s ² 5.4259	62 Lu Lutetium 174.967 [Xe]4f ¹⁴ 5d ¹ 6s ² 5.4259
																63 Ac Actinium (227) [Rn]6d ¹ 7s ² 5.17	64 Th Thorium 232.0381 [Rn]6d ² 7s ² 6.3067
																65 Pa Protactinium 231.03588 [Rn]5f ² 6d ¹ 7s ² 5.89	66 U Uranium 238.02891 [Rn]5f ³ 6d ¹ 7s ² 6.1941
																67 Np Neptunium (237) [Rn]5f ⁴ 6d ¹ 7s ² 6.2657	68 Pu Plutonium (244) [Rn]5f ⁶ 7s ² 6.0260
																69 Am Americium (243) [Rn]5f ⁷ 7s ² 5.9738	70 Cm Curium (247) [Rn]5f ⁸ 7s ² 5.9914
																71 Bk Berkelium (247) [Rn]5f ⁹ 7s ² 6.1979	72 Cf Californium (251) [Rn]5f ¹⁰ 7s ² 6.2817
																73 Es Einsteinium (252) [Rn]5f ¹¹ 7s ² 6.42	74 Fm Fermium (257) [Rn]5f ¹² 7s ² 6.50
																75 Md Mendelevium (258) [Rn]5f ¹³ 7s ² 6.58	76 No Nobelium (259) [Rn]5f ¹⁴ 7s ² 6.65
																77 Lr Lawrencium (262) [Og]5f ¹⁴ 7s ² 7p ^{1/2} 4.9 ?	78 Lr Lawrencium (262) [Og]5f ¹⁴ 7s ² 7p ^{1/2} 4.9 ?

- ☐ Solids
- ☐ Liquids
- ☐ Gases
- ☐ Artificially Prepared

Atomic Number	Ground-state Level
58	¹ G ₄
Ce	
Cerium	
140.116	
[Xe]4f5d6s	
5.5387	
Ground-state Configuration	Ionization Energy (eV)

† Based upon ¹²C.
() indicates the mass number of the most stable isotope.