

PERIODIC TABLE OF THE ELEMENTS

Group 1 IA																												18 VIIIA																																																																																																																																																															
1 H Hydrogen 1.00794 1s																												2 He Helium 4.002602 1s ²																																																																																																																																																															
2 Li Lithium 6.941 1s ² 2s																		3 Be Beryllium 9.012182 1s ² 2s ²										13 IIIA B Boron 10.811 1s ² 2s ² 2p ¹																		14 IVA C Carbon 12.0107 1s ² 2s ² 2p ²										15 VA N Nitrogen 14.0067 1s ² 2s ² 2p ³										16 VIA O Oxygen 15.9994 1s ² 2s ² 2p ⁴										17 VIIA F Fluorine 18.9984032 1s ² 2s ² 2p ⁵										18 VIIIA Ne Neon 20.1797 1s ² 2s ² 2p ⁶																																																																																																					
3 Na Sodium 22.989770 [Ne]3s ¹																		4 Mg Magnesium 24.3050 [Ne]3s ²										5 IIIB Al Aluminum 26.981538 [Ne]3s ² 3p ¹										6 IIIB Si Silicon 28.0855 [Ne]3s ² 3p ²										7 IIIB P Phosphorus 30.973761 [Ne]3s ² 3p ³										8 IIIB S Sulfur 32.065 [Ne]3s ² 3p ⁴										9 IIIB Cl Chlorine 35.453 [Ne]3s ² 3p ⁵										10 IIIB Ar Argon 39.948 [Ne]3s ² 3p ⁶																																																																																																													
4 K Potassium 39.0983 [Ar]4s																		5 Ca Calcium 40.078 [Ar]4s ²										6 IVB Sc Scandium 44.955910 [Ar]3d ¹ 4s ²										7 IVB Ti Titanium 47.867 [Ar]3d ² 4s ²										8 IVB V Vanadium 50.9415 [Ar]3d ³ 4s ²										9 IVB Cr Chromium 51.9961 [Ar]3d ⁵ 4s										10 IVB Mn Manganese 54.938049 [Ar]3d ⁵ 4s ²										11 IVB Fe Iron 55.845 [Ar]3d ⁶ 4s ²										12 IVB Co Cobalt 58.933200 [Ar]3d ⁷ 4s ²										13 IVB Ni Nickel 58.6934 [Ar]3d ⁸ 4s ²										14 IVB Cu Copper 63.546 [Ar]3d ¹⁰ 4s										15 IVB Zn Zinc 65.409 [Ar]3d ¹⁰ 4s ²										16 IVB Ga Gallium 69.723 [Ar]3d ¹⁰ 4s ² 4p										17 IVB Ge Germanium 72.64 [Ar]3d ¹⁰ 4s ² 4p ²										18 IVB As Arsenic 74.92160 [Ar]3d ¹⁰ 4s ² 4p ³										19 IVB Se Selenium 78.96 [Ar]3d ¹⁰ 4s ² 4p ⁴										20 IVB Br Bromine 79.904 [Ar]3d ¹⁰ 4s ² 4p ⁵										21 IVB Kr Krypton 83.798 [Ar]3d ¹⁰ 4s ² 4p ⁶									
5 Rb Rubidium 85.4678 [Kr]5s																		6 Sr Strontium 87.62 [Kr]5s ²										7 VB Y Yttrium 88.90585 [Kr]4d ¹ 5s										8 VB Zr Zirconium 91.224 [Kr]4d ² 5s										9 VB Nb Niobium 92.90638 [Kr]4d ⁴ 5s										10 VB Mo Molybdenum 95.94 [Kr]4d ⁵ 5s										11 VB Tc Technetium (98) [Kr]4d ⁵ 5s ²										12 VB Ru Ruthenium 101.07 [Kr]4d ⁷ 5s										13 VB Rh Rhodium 102.90550 [Kr]4d ⁸ 5s										14 VB Pd Palladium 106.42 [Kr]4d ¹⁰										15 VB Ag Silver 107.8682 [Kr]4d ¹⁰ 5s										16 VB Cd Cadmium 112.411 [Kr]4d ¹⁰ 5s ²										17 VB In Indium 114.818 [Kr]4d ¹⁰ 5s ² 5p										18 VB Sn Tin 118.710 [Kr]4d ¹⁰ 5s ² 5p ²										19 VB Sb Antimony 121.760 [Kr]4d ¹⁰ 5s ² 5p ³										20 VB Te Tellurium 127.60 [Kr]4d ¹⁰ 5s ² 5p ⁴										21 VB I Iodine 126.90447 [Kr]4d ¹⁰ 5s ² 5p ⁵										22 VB Xe Xenon 131.293 [Kr]4d ¹⁰ 5s ² 5p ⁶									
6 Cs Cesium 132.90545 [Xe]6s																		7 Ba Barium 137.327 [Xe]6s ²										8 VIB Hf Hafnium 178.49 [Xe]4f ¹⁴ 5d ² 6s ²										9 VIB Ta Tantalum 180.9479 [Xe]4f ¹⁴ 5d ³ 6s ²										10 VIB W Tungsten 183.84 [Xe]4f ¹⁴ 5d ⁴ 6s ²										11 VIB Re Rhenium 186.207 [Xe]4f ¹⁴ 5d ⁵ 6s ²										12 VIB Os Osmium 190.23 [Xe]4f ¹⁴ 5d ⁶ 6s ²										13 VIB Ir Iridium 192.217 [Xe]4f ¹⁴ 5d ⁷ 6s ²										14 VIB Pt Platinum 195.078 [Xe]4f ¹⁴ 5d ⁹ 6s										15 VIB Au Gold 196.96655 [Xe]4f ¹⁴ 5d ¹⁰ 6s										16 VIB Hg Mercury 200.59 [Xe]4f ¹⁴ 5d ¹⁰ 6s ²										17 VIB Tl Thallium 204.3833 [Hg]6p										18 VIB Pb Lead 207.2 [Hg]6p ²										19 VIB Bi Bismuth 208.98038 [Hg]6p ³										20 VIB Po Polonium (209) [Hg]6p ⁴										21 VIB At Astatine (210) [Hg]6p ⁵										22 VIB Rn Radon (222) [Hg]6p ⁶																			
7 Fr Francium (223) [Rn]7s																		8 Ra Radium (226) [Rn]7s ²										9 VIIA Rf Rutherfordium (261) [Rn]5f ¹⁴ 6d ² 7s ²										10 VIIA Db Dubnium (268) [Rn]5f ¹⁴ 6d ³ 7s ²										11 VIIA Sg Seaborgium (271) [Rn]5f ¹⁴ 6d ⁴ 7s ²										12 VIIA Bh Bohrium (272) [Rn]5f ¹⁴ 6d ⁵ 7s ²										13 VIIA Hs Hassium (277) [Rn]5f ¹⁴ 6d ⁶ 7s ²										14 VIIA Mt Meitnerium (276) [Rn]5f ¹⁴ 6d ⁷ 7s ²										15 VIIA Ds Darmstadtium (281) [Rn]5f ¹⁴ 6d ⁸ 7s ²										16 VIIA Rg Roentgenium (280) [Rn]5f ¹⁴ 6d ⁹ 7s ²										17 VIIA Cn Copernicium (285) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²										18 VIIA Nh Nihonium (285) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²										19 VIIA Fl Flerovium (287) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²										20 VIIA Mc Moscovium (289) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²										21 VIIA Lv Livermorium (291) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²										22 VIIA Ts Tennessine (294) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²										23 VIIA Og Oganesson (294) [Rn]5f ¹⁴ 6d ¹⁰ 7s ²																			
Lanthanides																		57 La Lanthanum 138.9055 [Xe]5d ¹ 6s ²										58 Ce Cerium 140.116 [Xe]4f ¹ 5d ¹ 6s ²										59 Pr Praseodymium 140.90765 [Xe]4f ³ 6s ²										60 Nd Neodymium 144.24 [Xe]4f ⁴ 6s ²										61 Pm Promethium (145) [Xe]4f ⁵ 6s ²										62 Sm Samarium 151.964 [Xe]4f ⁶ 6s ²										63 Eu Europium 151.964 [Xe]4f ⁷ 6s ²										64 Gd Gadolinium 157.25 [Xe]4f ⁷ 5d ¹ 6s ²										65 Tb Terbium 158.92534 [Xe]4f ⁹ 6s ²										66 Dy Dysprosium 162.500 [Xe]4f ¹⁰ 6s ²										67 Ho Holmium 164.93032 [Xe]4f ¹¹ 6s ²										68 Er Erbium 167.259 [Xe]4f ¹² 6s ²										69 Tm Thulium 168.93421 [Xe]4f ¹³ 6s ²										70 Yb Ytterbium 173.04 [Xe]4f ¹⁴ 6s ²										71 Lu Lutetium 174.967 [Xe]4f ¹⁴ 5d ¹ 6s ²																													
Actinides																		89 Ac Actinium (227) [Rn]6d ¹ 7s ²										90 Th Thorium 232.0381 [Rn]6d ² 7s ²										91 Pa Protactinium 231.03588 [Rn]5f ² 6d ¹ 7s ²										92 U Uranium 238.02891 [Rn]5f ³ 6d ¹ 7s ²										93 Np Neptunium (237) [Rn]5f ⁴ 6d ¹ 7s ²										94 Pu Plutonium (244) [Rn]5f ⁶ 7s ²										95 Am Americium (243) [Rn]5f ⁷ 7s ²										96 Cm Curium (247) [Rn]5f ⁷ 6d ¹ 7s ²										97 Bk Berkelium (247) [Rn]5f ⁹ 7s ²										98 Cf Californium (251) [Rn]5f ¹⁰ 7s ²										99 Es Einsteinium (252) [Rn]5f ¹¹ 7s ²										100 Fm Fermium (257) [Rn]5f ¹² 7s ²										101 Md Mendelevium (258) [Rn]5f ¹³ 7s ²										102 No Nobelium (259) [Rn]5f ¹⁴ 7s ²										103 Lr Lawrencium (262) [Rn]5f ¹⁴ 7s ² 7p ¹																													

- Solids
- Liquids
- Gases
- Artificially Prepared

Diagram illustrating the structure of an element box (Cerium, Ce):

- Atomic Number: 58
- Ground-state Level: 1G₄
- Symbol: Ce
- Name: Cerium
- Atomic Weight: 140.116
- Ground-state Configuration: [Xe]4f¹5d¹6s²
- Ionization Energy (eV): 5.5387

TYPICAL ANALYSIS DEPTHS FOR TECHNIQUES

