

Periodic Table of the Elements

<p>1 (IA) (Alkali Metals)</p> <p>2 (IIA) (Alkaline Earth Metals)</p>										<p>13 (IIIA) 14 (IVA) 15 (VA) 16 (VIA) 17 (VIIA) (Halogens)</p>										<p>18 (VIIIA) (Noble Gases)</p>															
<p>1 1.008 -259 +1, -1 -252 2.20 Hydrogen</p>										<p>2 4.003 -272 -268 Helium</p>																									
<p>3 6.941 180 +1 1347 0.98 Lithium</p>										<p>4 9.012 1278 +2 2970 1.57 Beryllium</p>										<p>5 10.811 2300 3 2550 2.04 Boron</p>	<p>6 12.011 3550 ±4.2 4827 2.55 Carbon</p>	<p>7 14.007 -209 ±3.5, 4.2 -195 3.04 Nitrogen</p>	<p>8 15.999 -218 -2 -182 3.44 Oxygen</p>	<p>9 18.998 -219 -1 -188 3.98 Fluorine</p>	<p>10 20.180 -248 -246 1s²2s²p⁶ Neon</p>										
<p>11 22.990 97 +1 882 0.93 Sodium</p>										<p>12 24.305 648 +2 1090 1.31 Magnesium</p>										<p>13 26.982 660 3 2467 1.61 Aluminum</p>	<p>14 28.086 1410 4.2 2355 1.90 Silicon</p>	<p>15 30.974 44 ±3.5, 4 280 2.19 Phosphorus</p>	<p>16 32.065 112 ±2.6 444 2.58 Sulfur</p>	<p>17 35.453 -100 ±1.3, 5.7 -185 3.16 Chlorine</p>	<p>18 39.948 -189 -185 [Ne]3s²p⁶ Argon</p>										
<p>19 39.098 63 +1 774 0.82 Potassium</p>										<p>20 40.078 839 +2 1484 1.00 Calcium</p>										<p>21 44.956 1541 +3 2831 1.36 Scandium</p>	<p>22 47.867 1660 +4, 3 3287 1.54 Titanium</p>	<p>23 50.942 1890 +5, 4, 3, 2 3380 1.63 Vanadium</p>	<p>24 51.996 1857 +6, 3, 2 2672 1.66 Chromium</p>	<p>25 54.938 1244 7.6, 4, 2, 3 1535 2.3 1962 1.83 Manganese</p>	<p>26 55.845 1495 2.3 2567 1.88 Iron</p>	<p>27 58.933 1453 2.3 2732 1.91 Cobalt</p>	<p>28 58.693 1083 2.1 2567 1.90 Nickel</p>	<p>29 63.546 419 2 907 1.65 Copper</p>	<p>30 65.409 29 3 2403 1.81 Zinc</p>	<p>31 69.723 29 3 2403 1.81 Gallium</p>	<p>32 72.61 937 4 2830 2.01 Germanium</p>	<p>33 74.922 817 ±3.5 613 2.18 Arsenic</p>	<p>34 78.96 217 -2.4, 6 684 2.55 Selenium</p>	<p>35 79.904 -7 ±1.5, 7 58 ±1.5, 7 2.96 Bromine</p>	<p>36 83.798 -156 0.2 -152 [Ar]4s²3d¹⁰4p⁶ Krypton</p>
<p>37 85.468 38 +1 688 0.82 Rubidium</p>										<p>38 87.62 769 +2 1384 0.95 Strontium</p>										<p>39 88.906 1522 +3 3338 1.22 Yttrium</p>	<p>40 91.224 1852 +4 4377 1.33 Zirconium</p>	<p>41 92.906 2468 +5, 3 4742 1.60 Niobium</p>	<p>42 95.94 2617 +6, 5, 4, 3, 2 4612 2.16 Molybdenum</p>	<p>43 98.906 (98) 2172 7 4877 2.10 Technetium</p>	<p>44 101.07 2310 2.3, 4, 6, 8 3900 2.20 Ruthenium</p>	<p>45 102.91 1966 2.3, 4 3727 2.28 Rhodium</p>	<p>46 106.42 1552 2.4 3140 2.20 Palladium</p>	<p>47 107.87 961 1 2212 1.93 Silver</p>	<p>48 112.41 320 2 765 1.69 Cadmium</p>	<p>49 114.82 156 3 2080 1.78 Indium</p>	<p>50 118.71 231 4.2 2270 1.96 Tin</p>	<p>51 121.76 630 ±3.5 1750 2.05 Antimony</p>	<p>52 127.60 -42 -2.4, 6 989 2.10 Tellurium</p>	<p>53 126.90 113 ±1.5, 7 184 2.66 Iodine</p>	<p>54 131.29 -111 0.2, 4, 6 -107 2.60 Xenon</p>
<p>55 132.91 28 +1 678 0.79 Cesium</p>										<p>56 137.33 725 +2 1640 0.89 Barium</p>										<p>57 138.91 921 +3 3457 1.10 Lanthanum</p>	<p>72 178.49 2227 +4 4602 1.3 Hafnium</p>	<p>73 180.95 2996 +5 5425 1.5 Tantalum</p>	<p>74 183.84 3410 +6, 5, 4, 3, 2 5660 2.36 Tungsten</p>	<p>75 186.21 3180 7.6, 4, 2, -1 5027 1.9 Rhenium</p>	<p>76 190.23 3045 2.3, 4, 6, 8 5027 2.2 Osmium</p>	<p>77 192.22 2410 2.3, 4, 6 4130 2.2 Iridium</p>	<p>78 195.08 1772 2.4 3827 2.28 Platinum</p>	<p>79 196.97 1064 3.1 2807 2.54 Gold</p>	<p>80 200.59 -38 2.1 356 2 Mercury</p>	<p>81 204.38 303 3.1 1457 2.04 Thallium</p>	<p>82 207.2 327 4.2 1740 2.33 Lead</p>	<p>83 208.98 271 3.5 1560 2.02 Bismuth</p>	<p>84 (209) 254 4.2, 6 962 2 Polonium</p>	<p>85 (210) 302 ±1.3, 5.7 337 2.2 Astatine</p>	<p>86 (222) -61 0.2 [Xe]6s²4f¹⁴5d¹⁰6p⁶ Radon</p>
<p>87 (223) 27 +1 677 0.7 Francium</p>										<p>88 (226) 700 +2 1140 0.89 Radium</p>										<p>89 (227) 1050 +3 3200 1.1 Actinium</p>	<p>104 (261) - - - - - - Rutherfordium</p>	<p>105 (262) - - - - - - Dubnium</p>	<p>106 (263) - - - - - - Seaborgium</p>	<p>107 (264) - - - - - - Bohrium</p>	<p>108 (265) - - - - - - Hassium</p>	<p>109 (268) - - - - - - Meitnerium</p>	<p>110 (271) - - - - - - Darmstadtium</p>	<p>111 (280) - - - - - - Roentgenium</p>	<p>112 (285) - - - - - - Copernicium</p>	<p>113 (284) - - - - - - Nihonium</p>	<p>114 (289) - - - - - - Flerovium</p>	<p>115 (288) - - - - - - Moscovium</p>	<p>116 (293) - - - - - - Livermorium</p>	<p>117 (294) - - - - - - Tennessine</p>	<p>118 (294) - - - - - - Oganesson</p>

Important Formulas

Density (ρ): density = mass / Volume (or $\rho = m/V$) **Planck's Equation:** $E = hv$

Percent Error: %error = [(experimental value – accepted value) / accepted value] x 100

Temperature Conversions: $K = ^\circ C + 273$ $^\circ C = K - 273$ **Calorimetry:** $q = \text{mass} \times C \times \Delta T$

Gas Laws: **Boyle's:** $P_1V_1 = P_2V_2$ **Charles's:** $V_1T_2 = V_2T_1$ **Ideal Gas Law:** $PV = nRT$

Molarity (M): molarity = moles solute / liters solution **Molality (m):** molality = moles solute / kilograms solvent

Mole Fraction: mole fraction = moles of solute (or solvent) / total moles of solution

<p>58 140.12 799 3.4 3426 1.12 Cerium</p>										<p>59 140.91 931 3.4 3512 1.13 Praseodymium</p>										<p>60 144.24 1021 3 3068 1.14 Neodymium</p>	<p>61 (145) 1080 3 2460 1.13 Promethium</p>	<p>62 150.36 1077 3.2 1791 1.17 Samarium</p>	<p>63 151.96 822 3.2 1597 1.2 Europium</p>	<p>64 157.25 1313 3 3266 1.2 Gadolinium</p>	<p>65 158.93 1356 3.4 3123 1.1 Terbium</p>	<p>66 162.50 1412 3 2562 1.22 Dysprosium</p>	<p>67 164.93 1474 3 2695 1.23 Holmium</p>	<p>68 167.26 1529 3 2863 1.24 Erbium</p>	<p>69 168.93 1545 3.2 1947 1.25 Thulium</p>	<p>70 173.05 819 3.2 1194 1.1 Ytterbium</p>	<p>71 174.97 1663 3 3395 1.27 Lutetium</p>
<p>90 232.038 5060 4 2028 1.3 Thorium</p>										<p>91 231.04 1600 N/A 4790 1.3 Protactinium</p>										<p>92 238.03 1132 6.5, 4, 3 3818 1.38 Uranium</p>	<p>93 (237) 640 6.5, 4, 3 3902 1.36 Neptunium</p>	<p>94 (244) 641 6.5, 4, 3 3232 1.28 Plutonium</p>	<p>95 (243) 994 6.5, 4, 3 2607 1.3 Americium</p>	<p>96 (247) 1340 3 N/A 1.3 Curium</p>	<p>97 (247) N/A 4.3 N/A 1.3 Berkelium</p>	<p>98 (251) N/A N/A N/A 1.3 Californium</p>	<p>99 (252) N/A 3 N/A 1.3 Einsteinium</p>	<p>100 (257) N/A 3 N/A 1.3 Fermium</p>	<p>101 (258) N/A 3 N/A 1.3 Mendelevium</p>	<p>102 (259) N/A 2.3 N/A 1.3 Nobelium</p>	<p>103 (262) N/A 3.2 N/A 1.3 Lawrencium</p>

Key

- Atomic Weight
- Atomic Number
- Melting Point (°C)
- Boiling Point (°C)
- Electronegativity
- Name
- Oxidation States
- Atomic Symbol
- Electron Configuration