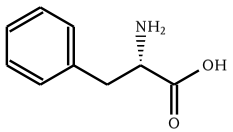
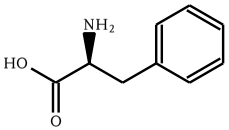


Periodic Table of the Elements



Group 1																	18
1	1 2.20 1s **H** hydrogen 1.008	2										13	14	15	16	17	2 1s **He** helium 4.0026
2	3 0.98 2s **Li** lithium 6.9675	4 1.57 2s **Be** beryllium 9.0122										5 2.04 2p **B** boron 10.8135	6 2.55 2p **C** carbon 12.0105	7 3.04 2p **N** nitrogen 14.007	8 3.44 2p **O** oxygen 15.9995	9 3.98 2p **F** fluorine 18.998	10 2p **Ne** neon 20.18
3	11 0.93 3s **Na** sodium 22.99	12 1.31 3s **Mg** magnesium 24.3055	3	4	5	6	7	8	9	10	11	12	13 1.61 3p **Al** aluminium 26.982	14 1.90 3p **Si** silicon 28.085	15 2.19 3p **P** phosphorus 30.974	16 2.58 3p **S** sulfur 32.0675	17 3.16 3p **Cl** chlorine 35.4515	18 3p **Ar** argon 39.8775
4	19 0.82 4s **K** potassium 39.098	20 1.00 4s **Ca** calcium 40.078	21 1.36 3d **Sc** scandium 44.956	22 1.54 3d **Ti** titanium 47.867	23 1.63 3d **V** vanadium 50.942	24 1.66 3d* **Cr** chromium 51.996	25 1.55 3d **Mn** manganese 54.938	26 1.83 3d **Fe** iron 55.845	27 1.88 3d **Co** cobalt 58.933	28 1.91 3d **Ni** nickel 58.693	29 1.90 3d* **Cu** copper 63.546	30 1.65 3d **Zn** zinc 65.38	31 1.81 4p **Ga** gallium 69.723	32 2.01 4p **Ge** germanium 72.63	33 2.18 4p **As** arsenic 74.922	34 2.55 4p **Se** selenium 78.971	35 2.96 4p **Br** bromine 79.904	36 4p **Kr** krypton 83.798
5	37 0.82 5s **Rb** rubidium 85.468	38 0.95 5s **Sr** strontium 87.62	39 1.22 4d **Y** yttrium 88.906	40 1.33 4d **Zr** zirconium 91.224	41 1.6 4d* **Nb** niobium 92.906	42 2.16 4d* **Mo** molybdenum 95.95	43 1.9 4d **Tc** technetium (97)	44 2.2 4d* **Ru** ruthenium 101.07	45 2.28 4d* **Rh** rhodium 102.91	46 2.20 4d* **Pd** palladium 106.42	47 1.93 4d* **Ag** silver 107.87	48 1.69 4d **Cd** cadmium 112.41	49 1.78 5p **In** indium 114.82	50 1.96 5p **Sn** tin 118.71	51 2.05 5p **Sb** antimony 121.76	52 2.1 5p **Te** tellurium 127.6	53 2.66 5p **I** iodine 126.9	54 2.60 5p **Xe** xenon 131.29
6	55 0.79 6s **Cs** caesium 132.91	56 0.89 6s **Ba** barium 137.33	* lanthanides	72 1.3 5d **Hf** hafnium 178.49	73 1.5 5d **Ta** tantalum 180.95	74 2.36 5d **W** tungsten 183.84	75 1.9 5d **Re** rhenium 186.21	76 2.2 5d **Os** osmium 190.23	77 2.2 5d **Ir** iridium 192.22	78 2.28 5d* **Pt** platinum 195.08	79 2.54 5d* **Au** gold 196.97	80 1.9 5d **Hg** mercury 200.59	81 1.62 6p **Tl** thallium 204.385	82 1.8 6p **Pb** lead 207.2	83 2.02 6p **Bi** bismuth 208.98	84 2.0 6p **Po** polonium (209)	85 2.2 6p **At** astatine (210)	86 6p **Rn** radon (222)
7	87 7s **Fr** francium (223)	88 0.9 7s **Ra** radium (226)	** actinides	104 6d **Rf** rutherfordium (267)	105 6d **Db** dubnium (268)	106 6d **Sg** seaborgium (269)	107 6d **Bh** bohrium (270)	108 6d **Hs** hassium (269)	109 6d **Mt** meitnerium (278)	110 6d **Ds** darmstadtium (281)	111 6d **Rg** roentgenium (282)	112 6d **Cn** copernicium (285)	113 7p **Nh** nihonium (286)	114 7p **Fl** flerovium (289)	115 7p **Mc** moscovium (290)	116 7p **Lv** livermorium (293)	117 7p **Ts** tennessine (294)	118 7p **Og** oganesson (294)

*	57 1.1 5d* **La** lanthanum 138.91	58 1.12 4f* **Ce** cerium 140.12	59 1.13 4f **Pr** praseodymium 140.91	60 1.14 4f **Nd** neodymium 144.24	61 4f **Pm** promethium (145)	62 1.17 4f **Sm** samarium 150.36	63 4f **Eu** europium 151.96	64 1.2 4f* **Gd** gadolinium 157.25	65 4f **Tb** terbium 158.93	66 1.22 4f **Dy** dysprosium 162.5	67 1.23 4f **Ho** holmium 164.93	68 1.24 4f **Er** erbium 167.26	69 1.25 4f **Tm** thulium 168.93	70 4f **Yb** ytterbium 173.05	71 1.27 4f **Lu** lutetium 174.97
**	89 1.1 6d* **Ac** actinium (227)	90 1.3 5f* **Th** thorium 232.04	91 1.5 5f* **Pa** protactinium 231.04	92 1.38 5f* **U** uranium 238.03	93 1.36 5f* **Np** neptunium (237)	94 1.28 5f **Pu** plutonium (244)	95 5f **Am** americium (243)	96 5f* **Cm** curium (247)	97 1.3 5f **Bk** berkelium (247)	98 1.3 5f **Cf** californium (251)	99 1.3 5f **Es** einsteinium (252)	100 1.3 5f **Fm** fermium (257)	101 1.3 5f **Md** mendelevium (258)	102 1.3 5f **No** nobelium (259)	103 6d **Lr** lawrencium (266)

Z: atomic number
χ: Pauling electronegativity
ss: last occupied subshell
Sy: symbol
element: element name
saw: standard atomic weight†

Z χ ss
Sy
element
saw

†Standard atomic weights (average terrestrial atomic weight) taken from the Commission on Isotopic Abundances and Atomic Weights (http://www.ciaaw.org/abridged-atomic-weights.htm). If CIAAW indicates a range for the standard atomic weight of an element, I used the arithmetic mean of the boundaries of the range. Elements with atomic weight in parentheses (e.g., Francium (223)) have no known stable isotopes and it is therefore impossible to provide a standard atomic weight. For these elements, the mass of a representative isotope is provided.

*Indicates an anomalous (Aufbau rule-breaking) ground state electron configuration.

Inspired by Ivan Griffin's LaTeX Periodic Table. LaTeXcode is released under the MIT open source license.

Abbreviations:

- **atm**: atmosphere
- **g**, **mg**: gram, milligram
- **K**: Kelvin
- **L**, **mL**: liter, milliliter
- **M**: Molar / molarity
- **mmHg**: millimeters of mercury
- **mol**: mole

Moles, conversion, pH, and other stuff :

- $1 \text{ mole} = 6.0221 \times 10^{23}$ things
- $\text{Kelvin} = {}^\circ\text{C} + 273.15$
- $\text{pH} = -1 \times \log[\text{H}_3\text{O}^+]$
- $1000\,\text{mL} = 1\,\text{L}$
- $1000\,\text{g} = 1\,\text{kg}$
- $1\,\text{mL} = 1\,\text{cm}^3$
- $1000\,\text{cal} = 1\,\text{kcal}$
- $\text{density} = \dfrac{\text{mass}}{\text{volume}}$

Concentration equations:

- $\%(\text{m/m}) = \dfrac{\text{mass of solute}}{\text{mass of solution}} \times 100$
- $\%(\text{v/v}) = \dfrac{\text{volume of solute}}{\text{volume of solution}} \times 100$
- $\%(\text{m/v}) = \dfrac{\text{mass of solute in grams}}{\text{volume of solution in mL}} \times 100$
- $\text{Molarity} = \dfrac{\text{number of moles of solute}}{\text{number of Liters of solution}}$

Gas equations:

- **Boyle's Law**: $\text{P}_1\text{V}_1 = \text{P}_2\text{V}_2$
- **Charles's Law**: $\dfrac{\text{V}_1}{\text{T}_1} = \dfrac{\text{V}_2}{\text{T}_2}$
- **Gay-Lussac's Law**: $\dfrac{\text{P}_1}{\text{T}_1} = \dfrac{\text{P}_2}{\text{T}_2}$
- **Combined gas Law**: $\dfrac{\text{P}_1\text{V}_1}{\text{T}_1} = \dfrac{\text{P}_2\text{V}_2}{\text{T}_2}$
- **Avogadro's Law**: $\dfrac{\text{V}_1}{\text{n}_1} = \dfrac{\text{V}_2}{\text{n}_2}$
- **Universal gas constant**: $\text{R} = \dfrac{0.0821\,\text{L atm}}{\text{mol K}}$
- **Ideal gas Law**: $\text{PV} = \text{nRT}$