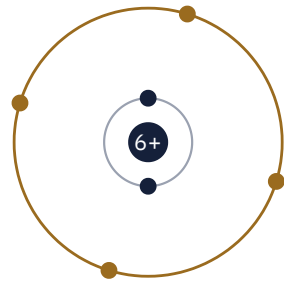


Tabula *periodica*

The 118 chemical elements and the structure of their atoms: nucleus, electron shells, valence electrons.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 1.008 H Hydrogen																	2 4.003 He Helium
3 6.94 Li Lithium	4 9.012 Be Beryllium																
11 22.99 Na Sodium	12 24.305 Mg Magnesium																
19 39.098 K Potassium	20 40.078 Ca Calcium	21 44.956 Sc Scandium	22 47.867 Ti Titanium	23 50.941 V Vanadium	24 51.996 Cr Chromium	25 54.938 Mn Manganese	26 55.845 Fe Iron	27 58.933 Co Cobalt	28 58.693 Ni Nickel	29 63.546 Cu Copper	30 65.38 Zn Zinc	31 69.723 Ga Gallium	32 72.63 Ge Germanium	33 74.922 As Arsenic	34 78.971 Se Selenium	35 79.904 Br Bromine	36 83.798 Kr Krypton
37 85.468 Rb Rubidium	38 87.62 Sr Strontium	39 88.906 Y Yttrium	40 91.224 Zr Zirconium	41 92.906 Nb Niobium	42 95.95 Mo Molybdenum	43 [98] Tc Technetium	44 101.07 Ru Ruthenium	45 102.905 Rh Rhodium	46 106.42 Pd Palladium	47 107.868 Ag Silver	48 112.414 Cd Cadmium	49 114.818 In Indium	50 118.71 Sn Tin	51 121.76 Sb Antimony	52 127.6 Te Tellurium	53 126.904 I Iodine	54 131.293 Xe Xenon
55 132.905 Cs Caesium	56 137.327 Ba Barium	57-71 Lanthanides	72 178.486 Hf Hafnium	73 180.948 Ta Tantalum	74 183.84 W Tungsten	75 186.207 Re Rhenium	76 190.23 Os Osmium	77 192.217 Ir Iridium	78 195.084 Pt Platinum	79 196.967 Au Gold	80 200.592 Hg Mercury	81 204.38 Tl Thallium	82 207.2 Pb Lead	83 208.98 Bi Bismuth	84 [209] Po Polonium	85 [210] At Astatine	86 [222] Rn Radon
87 [223] Fr Francium	88 [226] Ra Radium	89-103 Actinides	104 [267] Rf Rutherfordium	105 [268] Db Dubnium	106 [269] Sg Seaborgium	107 [270] Bh Bohrium	108 [269] Hs Hassium	109 [278] Mt Meitnerium	110 [281] Ds Darmstadtium	111 [282] Rg Roentgenium	112 [285] Cn Copernicium	113 [286] Nh Nihonium	114 [289] Fl Flerovium	115 [290] Mc Moscovium	116 [293] Lv Livermorium	117 [294] Ts Tennessine	118 [294] Og Oganesson
57 138.905 La Lanthanum	58 140.116 Ce Cerium	59 140.908 Pr Praseodymium	60 144.242 Nd Neodymium	61 [145] Pm Promethium	62 150.36 Sm Samarium	63 151.964 Eu Europium	64 157.25 Gd Gadolinium	65 158.925 Tb Terbium	66 162.5 Dy Dysprosium	67 164.93 Ho Holmium	68 167.259 Er Erbium	69 168.934 Tm Thulium	70 173.045 Yb Ytterbium	71 174.967 Lu Lutetium			
89 [227] Ac Actinium	90 232.038 Th Thorium	91 231.036 Pa Protactinium	92 238.029 U Uranium	93 [237] Np Neptunium	94 [244] Pu Plutonium	95 [243] Am Americium	96 [247] Cm Curium	97 [247] Bk Berkelium	98 [251] Cf Californium	99 [252] Es Einsteinium	100 [257] Fm Fermium	101 [258] Md Mendelevium	102 [259] No Nobelium	103 [262] Lr Lawrencium			

HOW TO READ · CARBON



- **Nucleus** · 6 protons. Atomic number 6, top left of the box.
- **Number of circles** · 2 electron shells. Carbon sits in the 2nd row.
- **Ochre dots** · the valence electrons, the ones that form chemical bonds. Their number gives the column. Carbon: 4 in the outer shell, group 14 (groups 13 to 18: add 10). Groups 3 to 12: the shell below also contributes, e.g. chromium 1 + 5 = 6, group 6.

ELEMENT FAMILIES

- Alkali metals
- Transition metals
- Lanthanides
- Metalloids
- Halogens
- Unknown properties
- Alkaline earth metals
- Post-transition metals
- Actinides
- Nonmetals
- Noble gases