

THE PERIODIC TABLE

The Periodic Table of the Elements

Group																		III	IV	V	VI	VII	0			
I	II																									
1 H hydrogen 1																										4 He helium 2
7 Li lithium 3	9 Be beryllium 4															11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10					
23 Na sodium 11	24 Mg magnesium 12															27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18					
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	64 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36									
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	101 Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54									
133 Cs caesium 55	137 Ba barium 56	139 La lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	— Po polonium 84	— At astatine 85	— Rn radon 86									
Fr francium 87	Ra radium 88	Ac actinium 89																								

*58-71 Lanthanoid series
†90-103 Actinoid series

140 Ce cerium 58	141 Pr praseodymium 59	144 Nd neodymium 60	— Pm promethium 61	150 Sm samarium 62	152 Eu europium 63	157 Gd gadolinium 64	159 Tb terbium 65	162 Dy dysprosium 66	165 Ho holmium 67	167 Er erbium 68	169 Tm thulium 69	173 Yb ytterbium 70	175 Lu lutetium 71
232 Th thorium 90	— Pa protactinium 91	238 U uranium 92	— Np neptunium 93	— Pu plutonium 94	— Am americium 95	— Cm curium 96	— Bk berkelium 97	— Cf californium 98	— Es einsteinium 99	— Fm fermium 100	— Md mendelevium 101	— No nobelium 102	— Lr lawrencium 103

Key

a

X

b

a = relative atomic mass
X = atomic symbol
b = proton (atomic) number

FEATURES

groups

- metallic characters of elements increases down a group
- elements in the same group have the same number of valence electrons

periods

- metallic characters of elements decrease from left to right
- elements in the same period have the same number of electron shells

GROUP 1: ALKALI METALS

physical properties

- soft and can be cut easily
- have low melting and boiling points
- have low densities

chemical properties

- very reactive
- react with water to form an alkali and hydrogen
- form ionic compounds

Li
Na
K
Rb
Cs
Fr

melting & boiling points ↓
densities ↑

DOWN THE GROUP
reactivity ↑