

# PERIODIC TABLE *of the* ELEMENTS



DEPARTMENT OF  
SCIENCE AND TECHNOLOGY



VIIIA 18  
**He**  
Helium 2  
4.00

IA 1  
**H**  
Hydrogen 1  
1.01

IIA 2  
**Li**  
Lithium 3  
6.94  
**Be**  
Beryllium 4  
9.01

IIIA 3  
**Na**  
Sodium 11  
22.99  
**Mg**  
Magnesium 12  
24.31

**H**  
Hydrogen  
1.01

Symbol  
Element name  
Atomic number  
Atomic mass

At room temperature the element is:

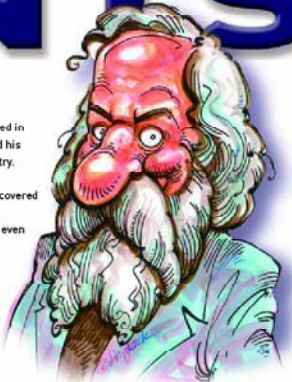
- Gas
- Liquid
- Natural solid
- Man-made solid (synthetic)

## DMITRI MENDELEYEV (1834 - 1907)

The Russian chemist, Dmitri Mendeleev, was the first to observe that if elements were listed in order of atomic mass, they showed regular (periodical) repeating properties. He formulated his discovery in a periodic table of elements, now regarded as the backbone of modern chemistry.

The crowning achievement of Mendeleev's periodic table lay in his prophecy of then, undiscovered elements. In 1869, the year he published his periodic classification, the elements gallium, germanium and scandium were unknown. Mendeleev left spaces for them in his table and even predicted their atomic masses and other chemical properties. Six years later, gallium was discovered and his predictions were found to be accurate. Other discoveries followed and their chemical behaviour matched that predicted by Mendeleev.

This remarkable man, the youngest in a family of 17 children, has left the scientific community with a classification system so powerful that it became the cornerstone in chemistry teaching and the prediction of new elements ever since. In 1955, element 101 was named after him: Md, Mendeleevium.



IIA 2  
**K**  
Potassium 19  
39.10  
**Ca**  
Calcium 20  
40.08

IIIB 3  
**Sc**  
Scandium 21  
44.96  
**Ti**  
Titanium 22  
47.88

IVB 4  
**V**  
Vanadium 23  
50.94  
**Cr**  
Chromium 24  
52.00

VB 5  
**Mn**  
Manganese 25  
54.94  
**Fe**  
Iron 26  
55.85

VIB 6  
**Co**  
Cobalt 27  
58.93  
**Ni**  
Nickel 28  
58.69

VII B 7  
**Cu**  
Copper 29  
63.55  
**Zn**  
Zinc 30  
65.39

VIII 8  
**Ga**  
Gallium 31  
69.72  
**Ge**  
Germanium 32  
72.61

VIII 9  
**As**  
Arsenic 33  
74.92  
**Se**  
Selenium 34  
78.96

VIII 10  
**Br**  
Bromine 35  
79.90  
**Kr**  
Krypton 36  
83.80

IIA 2  
**Rb**  
Rubidium 37  
85.47  
**Sr**  
Strontium 38  
87.62

IIIB 3  
**Y**  
Yttrium 39  
88.91  
**Zr**  
Zirconium 40  
91.22

IVB 4  
**Nb**  
Niobium 41  
92.91  
**Mo**  
Molybdenum 42  
95.94

VB 5  
**Tc**  
Technetium 43  
[98]  
**Ru**  
Ruthenium 44  
101.07

VIB 6  
**Rh**  
Rhodium 45  
102.91  
**Pd**  
Palladium 46  
106.42

VII B 7  
**Ag**  
Silver 47  
107.87  
**Cd**  
Cadmium 48  
112.41

VIII 8  
**In**  
Indium 49  
114.82  
**Sn**  
Tin 50  
118.71

VIII 9  
**Sb**  
Antimony 51  
121.76  
**Te**  
Tellurium 52  
127.60

VIII 10  
**I**  
Iodine 53  
126.90  
**Xe**  
Xenon 54  
131.29

IIA 2  
**Cs**  
Caesium 55  
132.91  
**Ba**  
Barium 56  
137.33

IIIB 3  
**Hf**  
Hafnium 72  
178.49  
**Ta**  
Tantalum 73  
180.95

IVB 4  
**W**  
Tungsten 74  
183.85  
**Re**  
Rhenium 75  
186.21

VIB 6  
**Os**  
Osmium 76  
190.23  
**Ir**  
Iridium 77  
192.22

VII B 7  
**Au**  
Gold 79  
196.97  
**Hg**  
Mercury 80  
200.59

VIII 8  
**Tl**  
Thallium 81  
204.38  
**Pb**  
Lead 82  
207.20

VIII 9  
**Bi**  
Bismuth 83  
208.98  
**Po**  
Polonium 84  
[209]

VIII 10  
**At**  
Astatine 85  
[210]  
**Rn**  
Radon 86  
[222]

IIA 2  
**Fr**  
Francium 87  
[223]  
**Ra**  
Radium 88  
[226]

IIIB 3  
**Rf**  
Rutherfordium 104  
[261]  
**Db**  
Dubnium 105  
[262]

IVB 4  
**Sg**  
Seaborgium 106  
[263]  
**Bh**  
Bohrium 107  
[262]

VIB 6  
**Hs**  
Hassium 108  
[265]  
**Mt**  
Meitnerium 109  
[266]

VII B 7  
**La**  
Lanthanum 57  
138.91  
**Ce**  
Cerium 58  
140.12

VIII 8  
**Pr**  
Praseodymium 59  
140.90  
**Nd**  
Neodymium 60  
144.24

VIII 9  
**Pm**  
Promethium 61  
[145]  
**Sm**  
Samarium 62  
150.36

VIII 10  
**Eu**  
Europium 63  
151.96  
**Gd**  
Gadolinium 64  
157.25

VIII 11  
**Tb**  
Terbium 65  
158.92  
**Dy**  
Dysprosium 66  
162.50

VIII 12  
**Ho**  
Holmium 67  
164.93  
**Er**  
Erbium 68  
167.26

VIII 13  
**Ac**  
Actinium 89  
227.02  
**Th**  
Thorium 90  
232.03  
**Pa**  
Protactinium 91  
231.03  
**U**  
Uranium 92  
238.02  
**Np**  
Neptunium 93  
[237]  
**Pu**  
Plutonium 94  
[244]  
**Am**  
Americium 95  
[243]  
**Cm**  
Curium 96  
[247]  
**Bk**  
Berkelium 97  
[247]  
**Cf**  
Californium 98  
[251]  
**Es**  
Einsteinium 99  
[254]  
**Fm**  
Fermium 100  
[257]  
**Md**  
Mendelevium 101  
[258]  
**No**  
Nobelium 102  
[259]  
**Lr**  
Lawrencium 103  
[260]