

# The periodic table of the elements

|                            |  |   |  |                               |  |                             |  |                            |  |                              |  |                                |  |                              |   |                            |   |                              |   |                             |  |                            |  |                             |  |                             |  |                              |  |                              |  |                               |  |                               |  |                            |  |
|----------------------------|--|---|--|-------------------------------|--|-----------------------------|--|----------------------------|--|------------------------------|--|--------------------------------|--|------------------------------|---|----------------------------|---|------------------------------|---|-----------------------------|--|----------------------------|--|-----------------------------|--|-----------------------------|--|------------------------------|--|------------------------------|--|-------------------------------|--|-------------------------------|--|----------------------------|--|
| 1                          |  | 2   |  |                               |  |                             |  |                            |  |                              |  |                                |  | 3                            | 4 | 5                          | 6 | 7                            | 0 |                             |  |                            |  |                             |  |                             |  |                              |  |                              |  |                               |  |                               |  |                            |  |
|                            |  |   |  |                               |  |                             |  |                            |  |                              |  |                                |  |                              |   |                            |   | 1<br>H<br>hydrogen<br>1      |   |                             |  |                            |  |                             |  | 4<br>He<br>helium<br>2      |  |                              |  |                              |  |                               |  |                               |  |                            |  |
|                            |  | Key   |  |                               |  |                             |  |                            |  |                              |  |                                |  |                              |   |                            |   |                              |   |                             |  |                            |  |                             |  |                             |  |                              |  |                              |  |                               |  |                               |  |                            |  |
|                            |  | relative atomic mass<br>atomic symbol<br>name<br>atomic (proton) number |  |                               |  |                             |  |                            |  |                              |  |                                |  |                              |   |                            |   |                              |   |                             |  |                            |  |                             |  |                             |  |                              |  |                              |  |                               |  |                               |  |                            |  |
| 7<br>Li<br>lithium<br>3    |  | 9<br>Be<br>beryllium<br>4   |  |                               |  |                             |  |                            |  |                              |  |                                |  |                              |   |                            |   |                              |   | 11<br>B<br>boron<br>5       |  | 12<br>C<br>carbon<br>6     |  | 14<br>N<br>nitrogen<br>7    |  | 16<br>O<br>oxygen<br>8      |  | 19<br>F<br>fluorine<br>9     |  | 20<br>Ne<br>neon<br>10       |  |                               |  |                               |  |                            |  |
| 23<br>Na<br>sodium<br>11   |  | 24<br>Mg<br>magnesium<br>12   |  |                               |  |                             |  |                            |  |                              |  |                                |  |                              |   |                            |   |                              |   | 27<br>Al<br>aluminium<br>13 |  | 28<br>Si<br>silicon<br>14  |  | 31<br>P<br>phosphorus<br>15 |  | 32<br>S<br>sulfur<br>16     |  | 35.5<br>Cl<br>chlorine<br>17 |  | 40<br>Ar<br>argon<br>18      |  |                               |  |                               |  |                            |  |
| 39<br>K<br>potassium<br>19 |  | 40<br>Ca<br>calcium<br>20   |  | 45<br>Sc<br>scandium<br>21    |  | 48<br>Ti<br>titanium<br>22  |  | 51<br>V<br>vanadium<br>23  |  | 52<br>Cr<br>chromium<br>24   |  | 55<br>Mn<br>manganese<br>25    |  | 56<br>Fe<br>iron<br>26       |   | 59<br>Co<br>cobalt<br>27   |   | 59<br>Ni<br>nickel<br>28     |   | 63.5<br>Cu<br>copper<br>29  |  | 65<br>Zn<br>zinc<br>30     |  | 70<br>Ga<br>gallium<br>31   |  | 73<br>Ge<br>germanium<br>32 |  | 75<br>As<br>arsenic<br>33    |  | 79<br>Se<br>selenium<br>34   |  | 80<br>Br<br>bromine<br>35     |  | 84<br>Kr<br>krypton<br>36     |  |                            |  |
| 85<br>Rb<br>rubidium<br>37 |  | 88<br>Sr<br>strontium<br>38   |  | 89<br>Y<br>yttrium<br>39      |  | 91<br>Zr<br>zirconium<br>40 |  | 93<br>Nb<br>niobium<br>41  |  | 96<br>Mo<br>molybdenum<br>42 |  | [98]<br>Tc<br>technetium<br>43 |  | 101<br>Ru<br>ruthenium<br>44 |   | 103<br>Rh<br>rhodium<br>45 |   | 106<br>Pd<br>palladium<br>46 |   | 108<br>Ag<br>silver<br>47   |  | 112<br>Cd<br>cadmium<br>48 |  | 115<br>In<br>indium<br>49   |  | 119<br>Sn<br>tin<br>50      |  | 122<br>Sb<br>antimony<br>51  |  | 128<br>Te<br>tellurium<br>52 |  | 127<br>I<br>iodine<br>53      |  | 131<br>Xe<br>xenon<br>54      |  |                            |  |
| 133<br>Cs<br>caesium<br>55 |  | 137<br>Ba<br>barium<br>56   |  | 139<br>La*<br>lanthanum<br>57 |  |                             |  | 178<br>Hf<br>hafnium<br>72 |  | 181<br>Ta<br>tantalum<br>73  |  | 184<br>W<br>tungsten<br>74     |  | 186<br>Re<br>rhenium<br>75   |   | 190<br>Os<br>osmium<br>76  |   | 192<br>Ir<br>iridium<br>77   |   | 195<br>Pt<br>platinum<br>78 |  | 197<br>Au<br>gold<br>79    |  | 201<br>Hg<br>mercury<br>80  |  | 204<br>Tl<br>thallium<br>81 |  | 207<br>Pb<br>lead<br>82      |  | 209<br>Bi<br>bismuth<br>83   |  | [209]<br>Po<br>polonium<br>84 |  | [210]<br>At<br>astatine<br>85 |  | [222]<br>Rn<br>radon<br>86 |  |

*\* The elements with atomic numbers from 58 to 71 are omitted from this part of the periodic table.*

*The relative atomic masses of copper and chlorine have not been rounded to the nearest whole number.*