

|          |          |          |          |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |  |
|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|--|
|          |          |          |          |           |           |           |           | H<br>1    |           |           |            |            |            |            |            |            |            | He<br>2    |  |
|          |          |          |          |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |  |
| 0        | I        | II       | III      | IV        | V         | VI        | VII       | 0         |           |           |            |            |            |            |            |            |            |            |  |
| He<br>2  | Li<br>3  | Be<br>4  | B<br>5   | C<br>6    | N<br>7    | O<br>8    | F<br>9    | Ne<br>10  |           |           |            |            |            |            |            |            |            |            |  |
| Ne<br>10 | Na<br>11 | Mg<br>12 | Al<br>13 | Si<br>14  | P<br>15   | S<br>16   | Cl<br>17  | Ar<br>18  |           |           |            |            |            |            |            |            |            |            |  |
| 0        | Ia       | IIa      | IIIa     | IVa       | Va        | VIa       | VIIa      | VIII      | Ib        | IIb       | IIIb       | IVb        | Vb         | VIb        | VIIb       | 0          |            |            |  |
| Ar<br>18 | K<br>19  | Ca<br>20 | Sc<br>21 | Ti<br>22  | V<br>23   | Cr<br>24  | Mn<br>25  | Fe<br>26  | Co<br>27  | Ni<br>28  | Cu<br>29   | Zn<br>30   | Ga<br>31   | Ge<br>32   | As<br>33   | Se<br>34   | Br<br>35   | Kr<br>36   |  |
| Kr<br>36 | Rb<br>37 | Sr<br>38 | Y<br>39  | Zr<br>40  | Nb<br>41  | Mo<br>42  | Tc<br>43  | Ru<br>44  | Rh<br>45  | Pd<br>46  | Ag<br>47   | Cd<br>48   | In<br>49   | Sn<br>50   | Sb<br>51   | Te<br>52   | I<br>53    | Xe<br>54   |  |
| Xe<br>54 | Cs<br>55 | Ba<br>56 | La<br>57 | Hf<br>72  | Ta<br>73  | W<br>74   | Re<br>75  | Os<br>76  | Ir<br>77  | Pt<br>78  | Au<br>79   | Hg<br>80   | Tl<br>81   | Pb<br>82   | Bi<br>83   | Po<br>84   | At<br>85   | Rn<br>86   |  |
| Rn<br>86 | Fr<br>87 | Ra<br>88 | Ac<br>89 | Rf<br>104 | Db<br>105 | Sg<br>106 | Bh<br>107 | Hs<br>108 | Mt<br>109 | Ds<br>110 | Uuu<br>111 | Uub<br>112 | Uut<br>113 | Uuq<br>114 | Uup<br>115 | Uuh<br>116 | Uus<br>117 | Uuo<br>118 |  |

\* Lanthanons

|          |          |          |          |          |          |          |          |          |          |           |           |           |           |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|
| Ce<br>58 | Pr<br>59 | Nd<br>60 | Pm<br>61 | Sm<br>62 | Eu<br>63 | Gd<br>64 | Tb<br>65 | Dy<br>66 | Ho<br>67 | Er<br>68  | Tm<br>69  | Yb<br>70  | Lu<br>71  |
| Th<br>90 | Pa<br>91 | U<br>92  | Np<br>93 | Pu<br>94 | Am<br>95 | Cm<br>96 | Bk<br>97 | Cf<br>98 | Es<br>99 | Fm<br>100 | Md<br>101 | No<br>102 | Lr<br>103 |

\* Actinons

- alkali metals
- alkaline earth metals
- transition metals
- other metals
- other nonmetals
- halogens
- noble gases
- actinides
- lanthanides

