TABLEAU PÉRIODIQUE DES ÉLÉMENTS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H 2.2 −1 +1 1.008 $1s^1$ Hydrogène																	2 He 4.0026 $1s^2$ Hélium
3 Li 0.98 +1 6.94 $[He]2s^1$ Lithium	4 Be 1.57 +1 +2 9.0122 $[He]2s^2$ Béryllium											5 B 2.04 −5 −3 −1 +1 +2 +3 10.81 $[He]2s^22p^1$ Bore	6 C 2.55 −4 −3 −2 −1 +1 +2 +3 +4 12.011 $[He]2s^22p^2$ Carbone	7 N 3.04 −3 −2 −1 +1 +2 +3 +4 +5 14.007 $[He]2s^22p^3$ Azote	8 O 3.44 −2 −1 +1 +2 15.999 $[He]2s^22p^4$ Oxygène	9 F 3.98 −1 18.998 $[He]2s^22p^5$ Fluor	10 Ne 20.180 $[He]2s^22p^6$ Néon
11 Na 0.93 −1 +1 22.990 $[Ne]3s^1$ Sodium	12 Mg 1.31 +1 +2 24.305 $[Ne]3s^2$ Magnésium											13 Al 1.61 −2 −1 +1 +2 +3 26.982 $[Ne]3s^23p^1$ Aluminium	14 Si 1.90 −4 −3 −2 −1 +1 +2 +3 +4 28.085 $[Ne]3s^23p^2$ Silicium	15 P 2.19 −3 −2 −1 +1 +2 +3 +4 +5 30.974 $[Ne]3s^23p^3$ Phosphore	16 S 2.58 −2 −1 +1 +2 +3 +4 +5 +6 32.06 $[Ne]3s^23p^4$ Soufre	17 Cl 3.16 −1 +1 +2 +3 +4 +5 +6 +7 35.45 $[Ne]3s^23p^5$ Chlore	18 Ar 39.95 $[Ne]3s^23p^6$ Argon
19 K 0.82 −1 +1 39.098 $[Ar]4s^1$ Potassium	20 Ca 1.00 −1 +1 +2 40.078 $[Ar]4s^2$ Calcium	21 Sc 1.36 +1 +2 +3 44.956 $[Ar]4s^23d^1$ Scandium	22 Ti 1.54 −2 −1 +1 +2 +3 +4 47.867 $[Ar]4s^23d^2$ Titane	23 V 1.63 −3 −1 +1 +2 +3 +4 +5 50.942 $[Ar]4s^23d^3$ Vanadium	24 Cr 1.66 −4 −2 −1 +1 +2 +3 +4 +5 +6 51.996 $[Ar]4s^13d^5$ Chrome	25 Mn 1.55 −3 −2 −1 +1 +2 +3 +4 +5 +6 +7 54.938 $[Ar]4s^23d^5$ Manganèse	26 Fe 1.83 −4 −2 −1 +1 +2 +3 +4 +5 +6 55.845 $[Ar]4s^23d^6$ Fer	27 Co 1.88 −3 −1 +1 +2 +3 +4 +5 58.933 $[Ar]4s^23d^7$ Cobalt	28 Ni 1.91 −2 −1 +1 +2 +3 +4 58.693 $[Ar]4s^23d^8$/$[Ar]4s^13d^9$ Nickel	29 Cu 1.90 −2 −1 +1 +2 +3 +4 63.546 $[Ar]4s^13d^{10}$ Cuivre	30 Zn 1.65 −2 +1 +2 65.38 $[Ar]4s^23d^{10}$ Zinc	31 Ga 1.81 −5 −2 −1 +1 +2 +3 69.723 $[Ar]4s^23d^{10}4p^1$ Gallium	32 Ge 2.01 −4 −3 −2 −1 +1 +2 +3 +4 72.630 $[Ar]4s^23d^{10}4p^2$ Germanium	33 As 2.18 −3 −2 −1 +1 +2 +3 +4 +5 74.922 $[Ar]4s^23d^{10}4p^3$ Arsenic	34 Se 2.55 −2 −1 +1 +2 +4 +5 +6 78.971 $[Ar]4s^23d^{10}4p^4$ Sélénium	35 Br 2.96 −1 +1 +3 +4 +5 +7 79.904 $[Ar]4s^23d^{10}4p^5$ Brome	36 Kr 3.0 +2 83.798 $[Ar]4s^23d^{10}4p^6$ Krypton
37 Rb 0.82 −1 +1 85.468 $[Kr]5s^1$ Rubidium	38 Sr 0.95 +1 +2 87.62 $[Kr]5s^2$ Strontium	39 Y 1.22 +1 +2 +3 88.906 $[Kr]5s^24d^1$ Yttrium	40 Zr 1.33 −2 +1 +2 +3 +4 91.224 $[Kr]5s^24d^2$ Zirconium	41 Nb 1.6 −3 −1 +1 +2 +3 +4 +5 92.906 $[Kr]5s^14d^4$ Niobium	42 Mo 2.16 −4 −2 −1 +1 +2 +3 +4 +5 +6 95.95 $[Kr]5s^14d^5$ Molybdène	43 Tc 1.9 −3 −1 +1 +2 +3 +4 +5 +6 +7 [98] $[Kr]5s^24d^5$ Technétium	44 Ru 2.2 −4 −2 −1 +1 +2 +3 +4 +5 +6 +7 +8 101.07 $[Kr]5s^14d^7$ Ruthénium	45 Rh 2.28 −3 −1 +1 +2 +3 +4 +5 +6 102.91 $[Kr]5s^14d^8$ Rhodium	46 Pd 2.20 +1 +2 +3 +4 +5 +6 106.42 $[Kr]4d^{10}$ Palladium	47 Ag 1.93 −2 −1 +1 +2 +3 +4 107.87 $[Kr]5s^14d^{10}$ Argent	48 Cd 1.69 −2 +1 +2 112.41 $[Kr]5s^24d^{10}$ Cadmium	49 In 1.78 −5 −2 −1 +1 +2 +3 114.82 $[Kr]5s^24d^{10}5p^1$ Indium	50 Sn 1.96 −4 −3 −2 −1 +1 +2 +3 +4 118.71 $[Kr]5s^24d^{10}5p^2$ Étain	51 Sb 2.05 −3 −2 −1 +1 +2 +3 +4 +5 121.76 $[Kr]5s^24d^{10}5p^3$ Antimoine	52 Te 2.1 −2 −1 +1 +2 +3 +4 +5 +6 127.60 $[Kr]5s^24d^{10}5p^4$ Tellure	53 I 2.66 −1 +1 +3 +4 +5 +7 126.90 $[Kr]5s^24d^{10}5p^5$ Iode	54 Xe 2.60 +2 +4 +6 +8 131.29 $[Kr]5s^24d^{10}5p^6$ Xénon
55 Cs 0.79 −1 +1 132.91 $[Xe]6s^1$ Césium	56 Ba 0.89 +1 +2 137.33 $[Xe]6s^2$ Baryum	57–71 Lanthanides	72 Hf 1.3 −2 +1 +2 +3 +4 178.49 $[Xe]6s^24f^{14}5d^2$ Hafnium	73 Ta 1.5 −3 −1 +1 +2 +3 +4 +5 180.95 $[Xe]6s^24f^{14}5d^3$ Tantale	74 W 2.36 −4 −2 −1 +1 +2 +3 +4 +5 +6 183.84 $[Xe]6s^24f^{14}5d^4$ Tungstène	75 Re 1.9 −3 −1 +1 +2 +3 +4 +5 +6 +7 186.21 $[Xe]6s^24f^{14}5d^5$ Rhénium	76 Os 2.2 −4 −2 −1 +1 +2 +3 +4 +5 +6 +7 +8 190.23 $[Xe]6s^24f^{14}5d^6$ Osmium	77 Ir 2.20 −3 −1 +1 +2 +3 +4 +5 +6 +7 +8 +9 192.22 $[Xe]6s^24f^{14}5d^7$ Iridium	78 Pt 2.28 −3 −2 −1 +1 +2 +3 +4 +5 +6 195.08 $[Xe]6s^14f^{14}5d^9$ Platine	79 Au 2.54 −3 −2 −1 +1 +2 +3 +5 196.97 $[Xe]6s^14f^{14}5d^{10}$ Or	80 Hg 2.00 −2 +1 +2 +4 200.59 $[Xe]6s^24f^{14}5d^{10}$ Mercure	81 Tl 1.62 −5 −2 −1 +1 +2 +3 204.38 $[Xe]6s^24f^{14}5d^{10}6p^1$ Thallium	82 Pb 1.87 −4 −2 −1 +1 +2 +3 +4 207.2 $[Xe]6s^24f^{14}5d^{10}6p^2$ Plomb	83 Bi 2.02 −3 −2 −1 +1 +2 +3 +4 +5 208.98 $[Xe]6s^24f^{14}5d^{10}6p^3$ Bismuth	84 Po 2.0 −2 +2 +4 +5 +6 [209] $[Xe]6s^24f^{14}5d^{10}6p^4$ Polonium	85 At 2.2 −1 +1 +3 +5 +7 [210] $[Xe]6s^24f^{14}5d^{10}6p^5$ Astate	86 Rn 2.2 +2 +6 [222] $[Xe]6s^24f^{14}5d^{10}6p^6$ Radon
87 Fr 0.7 +1 [223] $[Rn]7s^1$ Francium	88 Ra 0.9 +2 [226] $[Rn]7s^2$ Radium	89–103 Actinides	104 Rf +4 [267] $[Rn]7s^25f^{14}6d^2$ Rutherfordium	105 Db +5 [268] $[Rn]7s^25f^{14}6d^3$ Dubnium	106 Sg +6 [269] $[Rn]7s^25f^{14}6d^4$ Seaborgium	107 Bh +7 [270] $[Rn]7s^25f^{14}6d^5$ Bohrium	108 Hs +8 [277] $[Rn]7s^25f^{14}6d^6$ Hassium	109 Mt [278] $[Rn]7s^25f^{14}6d^7$ Meitnérium	110 Ds [281] $[Rn]7s^25f^{14}6d^8$ Darmstadtium	111 Rg [282] $[Rn]7s^25f^{14}6d^9$ Rœntgénium	112 Cn [285] $[Rn]7s^25f^{14}6d^{10}$ Copernicium	113 Nh [286] $[Rn]7s^25f^{14}6d^{10}7p^1$ Nihonium	114 Fl [289] $[Rn]7s^25f^{14}6d^{10}7p^2$ Flérovium	115 Mc [290] $[Rn]7s^25f^{14}6d^{10}7p^3$ Moscovium	116 Lv [293] $[Rn]7s^25f^{14}6d^{10}7p^4$ Livermorium	117 Ts [294] $[Rn]7s^25f^{14}6d^{10}7p^5$ Tennesse	118 Og [294] $[Rn]7s^25f^{14}6d^{10}7p^6$ Oganesson

...

Non-métaux
Métaux alcalins
Métalloïdes
Métaux de transition
Actinides
Gaz rares
Métaux alcalino-terreux
Métaux
Lanthanides
Non catégorisés

numéro atomique
symbole
masse atomique
configuration électronique
nom

22 Ti 1.54 47.867 $[Ar]4s^23d^2$ Titane

électronégativité *
nombres d'oxydation courants (les plus fréquents en **gras**)

Tc radioactif artificiel
Po radioactif naturel

© **2019** – Chimiscope – H. Hagemann & D. Perret

57 La 1.1 +1 +2 +3 138.91 $[Xe]6s^25d^1$ Lanthane	58 Ce 1.12 +2 +3 +4 140.12 $[Xe]6s^24f^15d^1$ Cérium	59 Pr 1.13 +2 +3 +4 140.91 $[Xe]6s^24f^3$ Praséodyme	60 Nd 1.14 +2 +3 +4 144.24 $[Xe]6s^24f^4$ Néodyme	61 Pm 1.13 +2 +3 [145] $[Xe]6s^24f^5$ Prométhium	62 Sm 1.17 +2 +3 150.36 $[Xe]6s^24f^6$ Samarium	63 Eu 1.2 +2 +3 151.96 $[Xe]6s^24f^7$ Europium	64 Gd 1.2 +1 +2 +3 157.25 $[Xe]6s^24f^75d^1$ Gadolinium	65 Tb 1.1 +1 +2 +3 +4 158.93 $[Xe]6s^24f^9$ Terbium	66 Dy 1.22 +2 +3 +4 162.50 $[Xe]6s^24f^{10}$ Dysprosium	67 Ho 1.23 +2 +3 164.93 $[Xe]6s^24f^{11}$ Holmium	68 Er 1.24 +2 +3 167.26 $[Xe]6s^24f^{12}$ Erbium	69 Tm 1.25 +2 +3 168.93 $[Xe]6s^24f^{13}$ Thulium	70 Yb 1.1 +2 +3 173.05 $[Xe]6s^24f^{14}$ Ytterbium	71 Lu 1.27 +2 +3 174.97 $[Xe]6s^24f^{14}5d^1$ Lutétium
89 Ac 1.1 +2 +3 [227] $[Rn]7s^26d^1$ Actinium	90 Th 1.3 +1 +2 +3 +4 232.04 $[Rn]7s^26d^2$ Thorium	91 Pa 1.5 +2 +3 +4 +5 231.04 $[Rn]7s^25f^26d^1$ Protactinium	92 U 1.38 +1 +2 +3 +4 +5 +6 238.03 $[Rn]7s^25f^36d^1$ Uranium	93 Np 1.36 +2 +3 +4 +5 +6 +7 +8 [237] $[Rn]7s^25f^46d^1$ Neptunium	94 Pu 1.28 +1 +2 +3 +4 +5 +6 +7 +8 [244] $[Rn]7s^25f^6$ Plutonium	95 Am 1.13 +2 +3 +4 +5 +6 +7 +8 [243] $[Rn]7s^25f^7$ Américium	96 Cm 1.28 +2 +3 +4 +6 [247] $[Rn]7s^25f^76d^1$ Curium	97 Bk 1.3 +2 +3 +4 [247] $[Rn]7s^25f^9$ Berkélium	98 Cf 1.3 +2 +3 +4 [251] $[Rn]7s^25f^{10}$ Californium	99 Es 1.3 +2 +3 +4 [252] $[Rn]7s^25f^{11}$ Einsteinium	100 Fm 1.3 +2 +3 [257] $[Rn]7s^25f^{12}$ Fermium	101 Md 1.3 +2 +3 [258] $[Rn]7s^25f^{13}$ Mendélévium	102 No 1.3 +2 +3 [259] $[Rn]7s^25f^{14}$ Nobélium	103 Lr 1.3 +3 [266] $[Rn]7s^25f^{14}7p^1$ Lawrencium

2019 IYPT

Chimiscope UNIGE

Le Chimiscope est membre du Scienscope,
la plateforme de découverte et d'expérimentation de l'Université de Genève
http://scienscope.unige.ch http://scienscope.unige.ch/chimiscope chimiscope@unige.ch

* Électronégativités de Mulliken pour les éléments principaux : S.G. Bratsch. J.Chem.Ed. 65 (1988) 34-41.
* Électronégativités de Pauling pour les métaux de transition : L. Pauling, P. Pauling. Chemistry (1975) p.175. W.H. Freeman & Co, San Francisco.
Masses atomiques : IUPAC (2018). https://iupac.org/wp-content/uploads/2018/12/IUPAC_Periodic_Table-01Dec18.jpg
Nombres d'oxydation : Wikipedia. https://en.wikipedia.org/wiki/List_of_oxidation_states_of_the_elements
Nombres d'oxydation des actinides : Radiochemistry Society. https://www.radiochemistry.org/periodictable/la_series/A7.html
Nombres d'oxydation des éléments superlourds : M. Schädel. Radiochimica Acta 100 (2012) 579-604.