

Tavola periodica degli elementi

Metalli alcalini Metalli alcalino terrosi Lantanoidi Attinoidi Metalli del blocco d Metalli del blocco p Semimetalli Non metalli Gas nobili Non classificati Gruppo 17 = Alogeni

RIFERIMENTI:

[MW] Commission on Isotopic Abundances and Atomic Weights, <http://www.ciaaw.org/>
[r_a] E. Clementi, D.L. Raimondi, W.P. Reinhardt, *J. Chem. Phys.*, **1967**, 47, 1300-1307.
[r_i] R. D. Shannon, *Acta Cryst.*, **1976**, A32, 751-767 and https://en.wikipedia.org/wiki/ionic_radius.
[m.s., b.p., phases, cryst. struct., ox. no.] <https://www.wikipedia.org>
[EN] A. L. Allred, *J. Inorg. Nucl. Chem.*, **1961**, 17, 215-221.
[Costanti] <http://physics.nist.gov/cuu/Constants/index.html>

1-IA		2-IA										3-IIIA										4-IVA										5-VA										6-VIA										7-VIIA										8-VIIIA										9-VIIIA										10-VIIIA										11-IB										12-IIB										13-IIIb										14-IVb										15-Vb										16-VIb										17-VIIb										18-VIIIb									
1 H Idrogeno 1.00794 52.9/154 13.99/20.271 g, H ₂ , H hex 1s ²	2 He Elio 4.002602(2) 31/- 0.95/4.222 g, He hcp 1s ²	3 Li Litio 6.941 167/90 453.65/1603 s, Li ⁺ , Li ⁺ bcc 1s ² 2s ¹	4 Be Berillio 9.0121831(5) 112/59 1560/2742 s, Be ²⁺ , Be ²⁺ hcp 1s ² 2s ²	11 Na Sodio 22.98976928(2) 190/116 370.94/1156.09 s, Na ⁺ , Na ⁺ bcc [Ne]3s ¹	12 Mg Magnesio 24.305 145/86 923/1363 s, Mg ²⁺ , Mg ²⁺ hcp [Ne]3s ²	19 K Potassio 39.0983(1) 243/152 336.7/1032 s, K ⁺ , K ⁺ bcc [Ar]4s ¹	20 Ca Calcio 40.078(4) 194/114 1115/1757 s, Ca ²⁺ , Ca ²⁺ fcc [Ar]4s ²	21 Sc Scandio 44.955908(5) 184/88.5 1814/3109 s, Sc ³⁺ , Sc ³⁺ hcp [Ar]3d ¹ 4s ²	22 Ti Titanio 47.867(1) 176/74.5 1941/3560 s, Ti ²⁺ , Ti ⁴⁺ hcp [Ar]3d ² 4s ²	23 V Vanadio 50.9415(1) 171/68 2183/3680 s, V ³⁺ , V ⁵⁺ bcc [Ar]3d ³ 4s ²	24 Cr Cromo 51.9961(6) 166/58 2180/2944 s, Cr ³⁺ , Cr ⁶⁺ bcc [Ar]3d ⁵ 4s ¹	25 Mn Manganese 54.938044(3) 161/60 1519/2334 s, Mn ²⁺ , Mn ⁷⁺ bcc [Ar]3d ⁵ 4s ²	26 Fe Ferro 55.845(2) 156/39 1811/3134 s, Fe ²⁺ , Fe ³⁺ bcc, fcc [Ar]3d ⁶ 4s ²	27 Co Cobalto 58.933194(4) 152/68.5 1768/3200 s, Co ²⁺ , Co ³⁺ hcp [Ar]3d ⁷ 4s ²	28 Ni Nichel 58.6934(4) 149/83 1728/3003 s, Ni ²⁺ , Ni ²⁺ fcc [Ar]3d ⁸ 4s ²	29 Cu Rame 63.546(3) 145/87 1357.77/2835 s, Cu ⁺ , Cu ²⁺ fcc [Ar]3d ¹⁰ 4s ¹	30 Zn Zinco 65.38(2) 142/88 692.68/1180 s, Zn ²⁺ , Zn ²⁺ hcp [Ar]3d ¹⁰ 4s ²	31 Ga Gallio 69.723(1) 136/76 302.91/2673 s, Ga ³⁺ , Ga ³⁺ ort [Ar]3d ¹⁰ 4s ² 1p ¹	32 Ge Germanio 72.630(8) 125/67 1211.40/3106 s, Ge ⁴⁺ , Ge ⁴⁺ fcc [Ar]3d ¹⁰ 4s ² 2p ²	33 As Arsenico 74.921595(6) 114/72 887 (subl.) s, As ³⁺ , As ³⁺ rho [Ar]3d ¹⁰ 4s ² 3p ³	34 Se Selenio 78.971(8) 103/184 494/958 s, Se ²⁻ , Se ²⁻ hex [Ar]3d ¹⁰ 4s ² 4p ⁴	35 Br Bromo 79.904 94/182 265.8/332.0 l, Br ₂ , Br ₂ ort [Ar]3d ¹⁰ 4s ² 5p ⁵	36 Kr Kriptone 83.798(2) 88/- 115.78/119.93 g, Kr fcc [Ar]3d ¹⁰ 4s ² 6p ⁶	37 Rb Rubidio 85.4678(3) 265/166 312.45/961 s, Rb ⁺ , Rb ⁺ bcc [Kr]5s ¹	38 Sr Stronzio 87.62(1) 219/132 1050/1650 s, Sr ²⁺ , Sr ²⁺ fcc [Kr]5s ²	39 Y Ittrio 88.90584(2) 212/104 1799/3203 s, Y ³⁺ hcp [Kr]4d ¹ 5s ²	40 Zr Zirconio 91.224(2) 206/86 2128/4650 s, Zr ⁴⁺ , Zr ⁴⁺ hcp [Kr]4d ² 5s ²	41 Nb Niobio 92.90637(2) 198/78 2750/5017 s, Nb ³⁺ , Nb ⁵⁺ bcc [Kr]4d ⁴ 5s ¹	42 Mo Molibdeno 95.95(1) 190/73 2896/4912 s, Mo ⁶⁺ , Mo ⁶⁺ bcc [Kr]4d ⁵ 5s ¹	43 Tc Tecnezio (98) 183/70 2430/4538 s, Tc ⁷⁺ hcp [Kr]4d ⁵ 5s ²	44 Ru Rutenio 101.07(2) 178/76 2607/4423 s, Ru ²⁺ , Ru ²⁺ hcp [Kr]4d ⁷ 5s ¹	45 Rh Rodio 102.90550(2) 173/80.5 2237/3968 s, Rh ³⁺ , Rh ³⁺ fcc [Kr]4d ⁸ 5s ¹	46 Pd Palladio 106.42(1) 169/100 1828.05/3236 s, Pd ²⁺ , Pd ²⁺ fcc [Kr]4d ¹⁰	47 Ag Argento 107.8682(2) 165/129 1234.93/2435 s, Ag ⁺ , Ag ¹⁺ fcc [Kr]4d ¹⁰ 5s ¹	48 Cd Cadmio 112.414(4) 161/109 594.22/1040 s, Cd ²⁺ , Cd ²⁺ hcp [Kr]4d ¹⁰ 5s ²	49 In Indio 114.818(1) 156/94 429.75/2345 s, In ³⁺ , In ³⁺ tet [Kr]4d ¹⁰ 5s ² 1p ¹	50 Sn Stagno 118.710(7) 145/83 505.08/2875 s, Sn ⁴⁺ , Sn ⁴⁺ fcc [Kr]4d ¹⁰ 5s ² 2p ²	51 Sb Antimonio 121.760(1) 133/74 903.73/1908 s, Sb ³⁺ , Sb ³⁺ rho [Kr]4d ¹⁰ 5s ² 3p ³	52 Te Tellurio 127.60(3) 123/207 722.66/1261 s, Te ²⁻ , Te ²⁻ hex [Kr]4d ¹⁰ 5s ² 4p ⁴	53 I Iodio 126.90447(3) 115/206 386.85/457.4 s, I ₂ , I ₂ ort [Kr]4d ¹⁰ 5s ² 5p ⁵	54 Xe Xeno 131.293(6) 108 161.40/165.051 g, Xe fcc [Kr]4d ¹⁰ 5s ² 6p ⁶	55 Cs Cesio 132.90545196 298/181 301.7/944 s, Cs ⁺ , Cs ⁺ bcc [Xe]6s ¹	56 Ba Bario 137.327(7) 253/149 1000/2118 s, Ba ²⁺ , Ba ²⁺ bcc [Xe]6s ²	57-71 Lantanoidi	72 Hf Afnio 178.49(2) 208/85 2506/4876 s, Hf ⁴⁺ , Hf ⁴⁺ hcp [Xe]4f ¹⁴ 5d ² 6s ²	73 Ta Tantalio 180.94788(2) 200/78 3290/5731 s, Ta ⁵⁺ , Ta ⁵⁺ bcc, tet [Xe]4f ¹⁴ 5d ³ 6s ²	74 W Tungsteno 183.84(1) 193/74 3695/6203 s, W ⁶⁺ , W ⁶⁺ bcc [Xe]4f ¹⁴ 5d ⁴ 6s ²	75 Re Renio 186.207(1) 188/67 3459/5869 s, Re ⁷⁺ , Re ⁷⁺ hcp [Xe]4f ¹⁴ 5d ⁵ 6s ²	76 Os Osmio 190.23(3) 185/53 3306/5285 s, Os ⁸⁺ , Os ⁸⁺ hcp [Xe]4f ¹⁴ 5d ⁶ 6s ²	77 Ir Iridio 192.217(3) 180/82 2719/4403 s, Ir ³⁺ , Ir ³⁺ fcc [Xe]4f ¹⁴ 5d ⁷ 6s ²	78 Pt Platino 195.084(9) 177/94 2041.4/4098 s, Pt ²⁺ , Pt ²⁺ fcc [Xe]4f ¹⁴ 5d ⁹ 6s ¹	79 Au Oro 196.966569(5) 174/99 1734.33/3243 s, Au ⁺ , Au ³⁺ fcc [Xe]4f ¹⁴ 5d ¹⁰ 6s ¹	80 Hg Mercurio 200.592(3) 171/116 234.3210/629.88 l, Hg ²⁺ , Hg ²⁺ rho [Xe]4f ¹⁴ 5d ¹⁰ 6s ²	81 Tl Tallio 204.38 156/102.5 577/1746 s, Tl ³⁺ , Tl ³⁺ hcp [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 1p ¹	82 Pb Piombo 207.2(1) 154/133 600.61/2022 s, Pb ²⁺ , Pb ²⁺ fcc [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 2p ²	83 Bi Bismuto 208.98040(1) 143/90 544.7/1837 s, Bi ³⁺ , Bi ³⁺ rho [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 3p ³	84 Po Polonio (209) 135/108 527/1235 s, Po ⁴⁺ , Po ⁴⁺ cub [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 4p ⁴	85 At Astatone (210) 127/n.a. 575/610 n.a., n.a., n.a. fcc [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 5p ⁵	86 Rn Radone (222) 220 202/211.5 g, Rn fcc [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁶	87 Fr Francio (223) n.a./n.a. n.a./n.a. n.a., n.a., n.a. bcc [Rn]7s ¹	88 Ra Radio (226) n.a./162 973/2010 s, Ra ²⁺ , Ra ²⁺ bcc [Rn]7s ²	89-103 Attinoidi	104 Rf Rutherfordio (267) n.a./n.a. 2400/5800 s, n.a., n.a. hcp [Rn]5f ¹⁴ 6d ² 7s ²	105 Db Dubnio (268) n.a./n.a. n.a./n.a. s, n.a., n.a. bcc [Rn]5f ¹⁴ 6d ³ 7s ²	106 Sg Seaborgio (269) n.a./n.a. n.a./n.a. s, n.a., n.a. bcc [Rn]5f ¹⁴ 6d ⁴ 7s ²	107 Bh Bohrio (270) n.a./n.a. n.a./n.a. s, n.a., n.a. hcp [Rn]5f ¹⁴ 6d ⁵ 7s ²	108 Hs Hassio (269) n.a./n.a. n.a./n.a. s, n.a., n.a. hcp [Rn]5f ¹⁴ 6d ⁶ 7s ²	109 Mt Meitnerio (278) n.a./n.a. n.a./n.a. s, n.a., n.a. fcc [Rn]5f ¹⁴ 6d ⁷ 7s ²	110 Ds Darmstadtio (281) n.a./n.a. n.a./n.a. s, n.a., n.a. bcc [Rn]5f ¹⁴ 6d ⁸ 7s ²	111 Rg Roentgenio (282) n.a./n.a. 1814/3109 s, n.a., n.a. bcc [Rn]5f ¹⁴ 6d ⁹ 7s ²	112 Cn Copernicio (285) n.a./n.a. n.a./n.a. n.a., n.a., n.a. hcp [Rn]5f ¹⁴ 6d ¹⁰ 7s ²	113 Nh Nihonio (286) n.a./n.a. 700/1430 s, n.a., n.a. hcp [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 1p ¹	114 Fl Flerovio (289) n.a./n.a. 340/420 s, n.a., n.a. n.a. [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 2p ²	115 Mc Moscovio (289) n.a./n.a. 670/1400 s, n.a., n.a. n.a. [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 3p ³	116 Lv Livermorio (293) n.a./n.a. n.a./n.a. s, n.a., n.a. n.a. [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 4p ⁴	117 Ts Tennesinio (294) n.a./n.a. n.a./n.a. s, n.a., n.a. n.a. [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 5p ⁵	118 Og Oganessio (294) n.a./n.a. n.a./n.a. s, n.a., n.a. n.a. [Rn]5f ¹⁴ 6d ¹⁰ 7s ² 6p ⁶	57 La Lantanio 138.90547(7) n.a./117.2 1193/3737 s, La ³⁺ , La ³⁺ dhcp [Xe]5d ¹ 6s ²	58 Ce Cerio 140.116(1) n.a./101 1068/3716 s, Ce ³⁺ , Ce ⁴⁺ dhcp [Xe]4f ¹ 5d ¹ 6s ²	59 Pr Praseodimio 140.90766(2) n.a./113 1208/3403 s, Pr ³⁺ , Pr ³⁺ dhcp [Xe]4f ² 6s ²	60 Nd Neodimio 144.242(3) n.a./112.3 1297/3347 s, Nd ³⁺ , Nd ³⁺ dhcp [Xe]4f ³ 6s ²	61 Pm Promezio (145) n.a./111 1345/3273 s, Pm ³⁺ , Pm ³⁺ dhcp [Xe]4f ⁴ 6s ²	62 Sm Samario 150.36(2) n.a./109.8 1345/2173 s, Sm ²⁺ , Sm ³⁺ rho [Xe]4f ⁵ 6s ²	63 Eu Europio 151.964(1) n.a./108.7 1099/1802 s, Eu ²⁺ , Eu ³⁺ bcc [Xe]4f ⁶ 6s ²	64 Gd Gadolino 157.25(3) n.a./107.8 1585/3273 s, Gd ³⁺ , Gd ³⁺ hcp [Xe]4f ⁷ 5d ¹ 6s ²	65 Tb Terbio 158.92535(2) n.a./106.3 1629/3396 s, Tb ³⁺ , Tb ³⁺ hcp [Xe]4f ⁸ 6s ²	66 Dy Disprosio 162.500(1) n.a./105.2 1680/2840 s, Dy ³⁺ , Dy ³⁺ hcp [Xe]4f ⁹ 6s ²	67 Ho Olmio 164.93033(2) n.a./104.1 1734/2873 s, Ho ³⁺ , Ho ³⁺ hcp [Xe]4f ¹⁰ 6s ²	68 Er Erbio 167.259(3) n.a./103 1802/3141 s, Er ³⁺ , Er ³⁺ hcp [Xe]4f ¹¹ 6s ²	69 Tm Tulio 168.93422(2) n.a./102 1818/2223 s, Tm ³⁺ , Tm ³⁺ hcp [Xe]4f ¹² 6s ²	70 Yb Itterbio 173.045(10) n.a./100.8 1097/1469 s, Yb ²⁺ , Yb ³⁺ fcc [Xe]4f ¹³ 6s ²	71 Lu Lutezio 174.9668(1) n.a./100.1 1925/3675 s, Lu ³⁺ , Lu ³⁺ hcp [Xe]4f ¹⁴ 5d ¹ 6s ²	89 Ac Attinio (227) n.a./126 n.a./n.a. s, Ac ³⁺ , Ac ³⁺ fcc [Rn]6d ¹ 7s ²	90 Th Torio 232.0377(4) n.a./108 2023/5061 s, Th ⁴⁺ , Th ⁴⁺ fcc [Rn]6d ² 7s ²	91 Pa Protoattinio 231.03588(2) n.a./104 1841/4300 s, Pa ⁴⁺ , Pa ⁴⁺ tet [Rn]5f ² 6d ¹ 7s ²	92 U Uranio 238.02891(3) n.a./103 1405.3/4404 s, U ⁴⁺ , U ⁴⁺ ort [Rn]5f ³ 6d ¹ 7s ²	93 Np Nettunio (237) n.a./89 912/4447 s, Np ³⁺ , Np ⁴⁺ ort [Rn]5f ⁴ 6d ¹ 7s ²	94 Pu Plutonio (244) n.a./100 912.5/3505 s, Pu ³⁺ , Pu ⁴⁺ mon [Rn]5f ⁶ 7s ²	95 Am Americio (243) n.a./111.5 1449/- s, Am ³⁺ , Am ³⁺ dhcp [Rn]5f ⁷ 7s ²	96 Cm Curio (247) n.a./99 1613/3383 s, Cm ³⁺ , Cm ³⁺ dhcp [Rn]5f ⁸ 6d ¹ 7s ²	97 Bk Berkelio (247) n.a./110 1259/2900 s, Bk ³⁺ , Bk ³⁺ dhcp [Rn]5f ⁹ 7s ²	98 Cf Californio (251) n.a./109 1173/- s, Cf ³⁺ , Cf ³⁺ dhcp [Rn]5f ¹⁰ 7s ²	99 Es Einsteinio (252) n.a./92.8 1133/1269 s, Es ³⁺ , Es ³⁺ fcc [Rn]5f ¹¹ 7s ²	100 Fm Fermio (257) n.a./n.a. 1800/n.a. s, n.a., n.a. n.a. [Rn]5f ¹² 7s ²	101 Md Mendelevio (258) n.a./n.a. 1100/n.a. s, n.a., n.a. n.a. [Rn]5f ¹³ 7s ²	102 No Nobelio (259) n.a./n.a. 1100/n.a. s, n.a., n.a. n.a. [Rn]5f ¹⁴ 7s ²	103 Lr Laurenzio (266) n.a./n.a. 1900/n.a. s, n.a., n.a. n.a. [Rn]5f ¹⁴ 7s ² 7p ¹																																																																

