

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Tavola periodica degli elementi																	
1																		
2																		
3																		
4																		
5																		
6																		
7																		

1																	2				
1 H 1,008 (2,1)																	2 He 4,00				
3 Li 6,941 (1,0)	4 Be 9,012 (1,5)															5 B 10,81 (2,0)	6 C 12,01 (2,5)	7 N 14,00 (3,0)	8 O 16,00 (3,5)	9 F 19,00 (4,0)	10 Ne 20,18
11 Na 22,99 (0,9)	12 Mg 24,31 (1,2)	IIIB	IVB	VB	VIB	VIIB	VIII B			IB	IIB	13 Al 26,98 (1,5)	14 Si 28,09 (1,8)	15 P 30,97 (2,1)	16 S 32,06 (2,5)	17 Cl 35,45 (3,0)	18 Ar 39,95				
19 K 39,10 (0,8)	20 Ca 40,08 (1,0)	21 Sc 44,96 (1,3)	22 Ti 47,90 (1,5)	23 V 50,94 (1,6)	24 Cr 52,00 (1,6)	25 Mn 54,94 (1,5)	26 Fe 55,85 (1,8)	27 Co 58,93 (1,8)	28 Ni 58,71 (1,9)	29 Cu 63,54 (1,9)	30 Zn 65,37 (1,6)	31 Ga 69,72 (1,6)	32 Ge 72,59 (1,8)	33 As 74,92 (2,0)	34 Se 78,96 (2,4)	35 Br 79,91 (2,8)	36 Kr 83,80				
37 Rb 85,47 (0,8)	38 Sr 87,62 (1,0)	39 Y 88,91 (1,2)	40 Zr 91,22 (1,4)	41 Nb 92,91 (1,5)	42 Mo 95,94 (1,8)	43 Tc 98,91 (1,9)	44 Ru 101,07 (2,2)	45 Rh 102,91 (2,2)	46 Pd 106,42 (2,2)	47 Ag 107,87 (1,9)	48 Cd 112,4 (1,7)	49 In 114,82 (1,7)	50 Sn 118,89 (1,8)	51 Sb 121,75 (1,9)	52 Te 127,68 (2,1)	53 I 126,90 (2,5)	54 Xe 131,30				
55 Cs 132,91 (0,7)	56 Ba 137,34 (0,9)	*57 La 138,91 (1,1)	72 Hf 178,49 (1,3)	73 Ta 180,95 (1,5)	74 W 183,85 (1,7)	75 Re 186,21 (1,9)	76 Os 190,23 (2,2)	77 Ir 192,22 (2,2)	78 Pt 195,09 (2,2)	79 Au 196,97 (2,4)	80 Hg 200,59 (1,9)	81 Tl 204,37 (1,8)	82 Pb 207,19 (1,8)	83 Bi 208,91 (1,9)	84 Po 210	85 At 210	86 Rn (222)				
87 Fr 223	88 Ra 226	**89 Ac 227	104 Rf 261	105 Db 262	106 Sg 266	107 Bh 107	108 Hs 265	109 Mt 266	110 Ds 281	111 Rg 282	112 Cn 285	113 Nh 286	114 Fl 289	115 Mc 290	116 Lv 293	117 Ts 294	118 Og 294				

Numero atomico

30
Zn
65,37
(1,6)

Simbolo

Massa atomica (peso atomico)

Elettronegatività
(secondo Pauling)

*Lantanoidi

58 Ce 140,12	59 Pr 140,907	60 Nd 144,24	61 Pm 146,92	62 Sm 150,35	63 Eu 151,36	64 Gd 157,25	65 Tb 158,924	66 Dy 162,50	67 Ho 164,930	68 Er 167,26	69 Tm 168,934	70 Yb 173,04	71 Lu 174,97
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**Attinoidi

90 Th 212,038	91 Pa 231,06	92 U 238,03	93 Np 237	94 Pu 242	95 Am 243	96 Cm 247	97 Bk 247	98 Cf 249	99 Es 254	100 Fm 253	101 Md 256	102 No 256	103 Lr 257
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Potenziali di riduzione standard $E^\ominus$ (volt), misurati a 25 °C ed 1 atm

Semireazione	$E^\ominus$	Semireazione	$E^\ominus$
$\text{Li}^+ + \text{e}^- \rightarrow \text{Li(s)}$	-3,040	$2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2(\text{g})$	0,000
$\text{Rb}^+ + \text{e}^- \rightarrow \text{Rb(s)}$	-2,98	$\text{Sn}^{4+} + 2\text{e}^- \rightarrow \text{Sn}^{2+}$	+0,15
$\text{K}^+ + \text{e}^- \rightarrow \text{K(s)}$	-2,931	$\text{Cu}^{2+} + \text{e}^- \rightarrow \text{Cu}^+$	+0,153
$\text{Cs}^+ + \text{e}^- \rightarrow \text{Cs(s)}$	-2,92	$\text{H}_2\text{SO}_4 + 2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2\text{SO}_3 + \text{H}_2\text{O}$	+0,17
$\text{Ba}^{2+} + 2\text{e}^- \rightarrow \text{Ba(s)}$	-2,912	$\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu(s)}$	+0,337
$\text{Ca}^{2+} + 2\text{e}^- \rightarrow \text{Ca(s)}$	-2,868	$\text{O}_2(\text{g}) + 2\text{H}_2\text{O} + 4\text{e}^- \rightarrow 4\text{OH}^-$	+0,401
$\text{Na}^+ + \text{e}^- \rightarrow \text{Na(s)}$	-2,71	$\text{MnO}_4^- + \text{e}^- \rightarrow \text{MnO}_4^{2-}$	+0,564
$\text{Mg}^{2+} + 2\text{e}^- \rightarrow \text{Mg(s)}$	-2,372	$\text{O}_2(\text{g}) + 2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2\text{O}_2$	+0,682
$\text{Be}^{2+} + 2\text{e}^- \rightarrow \text{Be(s)}$	-1,847	$\text{Fe}^{3+} + \text{e}^- \rightarrow \text{Fe}^{2+}$	+0,771
$\text{Al}^{3+} + 3\text{e}^- \rightarrow \text{Al(s)}$	-1,662	$\text{Ag}^+ + \text{e}^- \rightarrow \text{Ag(s)}$	+0,800
$\text{Ti}^{2+} + 2\text{e}^- \rightarrow \text{Ti(s)}$	-1,63	$\text{Hg}^{2+} + 2\text{e}^- \rightarrow \text{Hg(s)}$	+0,851
$\text{Mn}^{2+} + 2\text{e}^- \rightarrow \text{Mn(s)}$	-1,185	$2\text{Hg}^{2+} + 2\text{e}^- \rightarrow \text{Hg}_2^{2+}$	+0,92
$\text{Zn}^{2+} + 2\text{e}^- \rightarrow \text{Zn(s)}$	-0,763	$\text{NO}_3^- + 4\text{H}^+ + 3\text{e}^- \rightarrow \text{NO(g)} + 2\text{H}_2\text{O}$	+0,96
$\text{Cr}^{3+} + 3\text{e}^- \rightarrow \text{Cr(s)}$	-0,74	$\text{Br}_2(\text{l}) + 2\text{e}^- \rightarrow 2\text{Br}^-$	+1,09
$\text{Fe}^{2+} + 2\text{e}^- \rightarrow \text{Fe(s)}$	-0,447	$\text{Pt}^{2+} + 2\text{e}^- \rightarrow \text{Pt(s)}$	+1,118
$\text{Cr}^{3+} + \text{e}^- \rightarrow \text{Cr}^{2+}$	-0,41	$\text{Cr}_2\text{O}_7^{2-} + 14\text{H}^+ + 6\text{e}^- \rightarrow 2\text{Cr}^{3+} + 7\text{H}_2\text{O}$	+1,33
$\text{Cd}^{2+} + 2\text{e}^- \rightarrow \text{Cd(s)}$	-0,403	$\text{Cl}_2(\text{g}) + 2\text{e}^- \rightarrow 2\text{Cl}^-$	+1,36
$\text{Ti}^{3+} + \text{e}^- \rightarrow \text{Ti}^{2+}$	-0,37	$\text{Au}^{3+} + 3\text{e}^- \rightarrow \text{Au(s)}$	+1,498
$\text{Co}^{2+} + 2\text{e}^- \rightarrow \text{Co(s)}$	-0,28	$\text{MnO}_4^- + 8\text{H}^+ + 5\text{e}^- \rightarrow \text{Mn}^{2+} + 4\text{H}_2\text{O}$	+1,51
$\text{Ni}^{2+} + 2\text{e}^- \rightarrow \text{Ni(s)}$	-0,257	$\text{H}_2\text{O}_2 + 2\text{H}^+ + 2\text{e}^- \rightarrow 2\text{H}_2\text{O}$	+1,77
$\text{Sn}^{2+} + 2\text{e}^- \rightarrow \text{Sn(s)}$	-0,137	$\text{F}_2(\text{g}) + 2\text{e}^- \rightarrow 2\text{F}^-$	+2,87
$\text{Pb}^{2+} + 2\text{e}^- \rightarrow \text{Pb(s)}$	-0,126		

Entalpie di formazione standard (kJ/mol)

$\text{Al}_2\text{O}_3(\text{s})$	-1676	CO(g)	-110,5
$\text{B}_2\text{H}_6(\text{g})$	35,61	$\text{CO}_2(\text{g})$	-393,5
$\text{B}_2\text{O}_3(\text{s})$	-1272	$\text{COCl}_2(\text{g})$	-220,1
$\text{Ba(OH)}_2(\text{s})$	-946,3	$\text{CS}_2(\text{g})$	280,3
$\text{BaCO}_3(\text{s})$	-1216	$\text{Fe}_2\text{O}_3(\text{s})$	-824,2
BaO(s)	-553,4	$\text{Fe}_3\text{O}_4(\text{s})$	-1118
$\text{CH}_4(\text{g})$	-74,87	FeO(s)	-266,7
$\text{C}_2\text{H}_2(\text{g})$	226,7	$\text{H}_2\text{O(g)}$	-241,8
$\text{C}_2\text{H}_4(\text{g})$	52,47	$\text{H}_2\text{O(l)}$	-285,8
$\text{C}_2\text{H}_6(\text{g})$	-84,68	$\text{H}_2\text{S(g)}$	-20,50
$\text{C}_2\text{N}_2(\text{g})$	309,1	HBr(g)	-35,38
$\text{C}_3\text{H}_6(\text{g})$	20,42	HCHO(g)	-115,9
$\text{C}_3\text{H}_8(\text{g})$	-103,8	HCl(g)	-93,31
$\text{C}_4\text{H}_{10}(\text{g})$	-126,1	HCN (g)	135,1
$\text{C}_6\text{H}_6(\text{l})$	49,04	HCOOH(l)	-424,8
$\text{C}_6\text{H}_{12}(\text{l})$	-156,2	HF(g)	-272,5
$\text{C}_6\text{H}_{14}(\text{l})$	-198,8	HI(g)	26,36
$\text{C}_6\text{H}_6(\text{l})$	49,04	$\text{Li}_2\text{O(s)}$	-598,7
$\text{C}_8\text{H}_{18}(\text{l})$	-250,2	LiOH(s)	-484,9
$\text{C}_{12}\text{H}_{26}(\text{l})$	-352,4	MgO(s)	-601,2
$\text{Ca(OH)}_2(\text{s})$	-986,1	$\text{N}_2\text{H}_4(\text{g})$	95,19
$\text{CaCO}_3(\text{s})$	-1207	$\text{N}_2\text{O(g)}$	82,05
CaO(s)	-635,1	$\text{Na}_2\text{CO}_3(\text{s})$	-1131
$\text{CCl}_4(\text{g})$	-100,4	$\text{Na}_2\text{O(s)}$	-418,0
$\text{CF}_4(\text{g})$	-933,2	NaCl(s)	-411,1
$\text{CH}_2\text{Cl}_2(\text{g})$	-95,52	NaOH(s)	-425,9
$\text{CH}_3\text{CH}_2\text{OH(l)}$	-277,0	$\text{NH}_3(\text{g})$	-45,94
$\text{CH}_3\text{CHO(g)}$	-166,4	NO(g)	90,29
$\text{CH}_3\text{Cl(g)}$	-86,32	$\text{NO}_2(\text{g})$	33,09
$\text{CH}_3\text{OH(l)}$	-238,6	$\text{SiO}_2(\text{s})$	-910,9
$\text{CHCl}_3(\text{g})$	-101,25	ZnO(s)	-348,3

Tavola periodica
dei corsi 2 e 9 di
Chimica, A.A.
2023/2024