

## POTENZIALI ELETTRODICI STANDARD DI RIDUZIONE A 25°C

Soluzione acida	Potenziali standard di riduzione, E° (volt)
$F_2(g) + 2 e^- \rightleftharpoons 2 F^-(aq)$	2,87
$Co^{3+}(aq) + e^- \rightleftharpoons Co^{2+}(aq)$	1,82
$Pb^{4+}(aq) + 2 e^- \rightleftharpoons Pb^{2+}(aq)$	1,8
$H_2O_2(aq) + 2 H^+(aq) + 2 e^- \rightleftharpoons 2 H_2O$	1,77
$NiO_2(s) + 4 H^+(aq) + 2 e^- \rightleftharpoons Ni^{2+}(aq) + 2 H_2O$	1,7
$PbO_2(s) + SO_4^{2-}(aq) + 4 H^+(aq) + 2 e^- \rightleftharpoons PbSO_4(s) + 2 H_2O$	1,685
$Au^+(aq) + e^- \rightleftharpoons Au(s)$	1,68
$2 HClO(aq) + 2 H^+(aq) + 2 e^- \rightleftharpoons Cl_2(g) + 2 H_2O$	1,63
$MnO_4^-(aq) + 8 H^+(aq) + 5 e^- \rightleftharpoons Mn^{2+}(aq) + 4 H_2O$	1,51
$Au^{3+}(aq) + 3 e^- \rightleftharpoons Au(s)$	1,50
$ClO_3^-(aq) + 6 H^+(aq) + 5 e^- \rightleftharpoons \frac{1}{2} Cl_2(g) + 3 H_2O$	1,47
$BrO_3^-(aq) + 6 H^+(aq) + 6 e^- \rightleftharpoons Br^-(aq) + 3 H_2O$	1,44
$Cl_2(g) + 2 e^- \rightleftharpoons 2 Cl^-(aq)$	1,36
$Cr_2O_7^{2-}(aq) + 14 H^+(aq) + 6 e^- \rightleftharpoons 2 Cr^{3+}(aq) + 7 H_2O$	1,33
$MnO_2(s) + 4 H^+(aq) + 2 e^- \rightleftharpoons Mn^{2+}(aq) + 2 H_2O$	1,23
$O_2(g) + 4 H^+(aq) + 4 e^- \rightleftharpoons 2 H_2O$	1,229
$IO_3^-(aq) + 6 H^+(aq) + 5 e^- \rightleftharpoons \frac{1}{2} I_2(aq) + 3 H_2O$	1,195
$ClO_4^-(aq) + 2 H^+(aq) + 2 e^- \rightleftharpoons ClO_3^-(aq) + H_2O$	1,19
$Br_2(liq) + 2 e^- \rightleftharpoons 2 Br^-(aq)$	1,08
$AuCl_4^-(aq) + 3 e^- \rightleftharpoons Au(s) + 4 Cl^-(aq)$	1,00
$Pd^{2+}(aq) + 2 e^- \rightleftharpoons Pd(s)$	0,987
$NO_3^-(aq) + 4 H^+(aq) + 3 e^- \rightleftharpoons NO(g) + 2 H_2O$	0,96
$NO_3^-(aq) + 3 H^+(aq) + 2 e^- \rightleftharpoons HNO_2(aq) + H_2O$	0,94
$2 Hg^+(aq) + 2 e^- \rightleftharpoons Hg_2^{2+}(aq)$	0,920
$Hg^{2+}(aq) + 2 e^- \rightleftharpoons Hg(liq)$	0,855
$Ag^+(aq) + e^- \rightleftharpoons Ag(s)$	0,7994
$Hg_2^{2+}(aq) + 2 e^- \rightleftharpoons 2 Hg(liq)$	0,789
$Fe^{3+}(aq) + e^- \rightleftharpoons Fe^{2+}(aq)$	0,771
$O_2(g) + 2 H^+(aq) + 2 e^- \rightleftharpoons H_2O_2(aq)$	0,682
$I_2(s) + 2 e^- \rightleftharpoons 2 I^-(aq)$	0,535
$Cu^+(aq) + e^- \rightleftharpoons Cu(s)$	0,521
$Cu^{2+}(aq) + 2 e^- \rightleftharpoons Cu(s)$	0,337
$Hg_2Cl_2(s) + 2 e^- \rightleftharpoons 2 Hg(liq) + 2 Cl^-(aq)$	0,27
$AgCl(s) + e^- \rightleftharpoons Ag(s) + Cl^-(aq)$	0,222
$SO_4^{2-}(aq) + 4 H^+(aq) + 2 e^- \rightleftharpoons SO_2(g) + 2 H_2O$	0,20
$SO_4^{2-}(aq) + 4 H^+(aq) + 2 e^- \rightleftharpoons H_2SO_3(aq) + H_2O$	0,17
$Cu^{2+}(aq) + e^- \rightleftharpoons Cu^+(aq)$	0,153
$Sn^{4+}(aq) + 2 e^- \rightleftharpoons Sn^{2+}(aq)$	0,15
$S(s) + 2 H^+ + 2 e^- \rightleftharpoons H_2S(aq)$	0,14
$AgBr(s) + e^- \rightleftharpoons Ag(s) + Br^-(aq)$	0,0713
$2 H^+(aq) + 2 e^- \rightleftharpoons H_2(g)$ -----(elettrodo di riferimento)-----	<b>0,0000</b> -----

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$2 \text{H}^+(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{H}_2(\text{g})$ -----(elettrodo di riferimento)-----	<b>0,0000</b> -----
$\text{N}_2\text{O}(\text{g}) + 6 \text{H}^+(\text{aq}) + \text{H}_2\text{O} + 4 \text{e}^- \rightleftharpoons 2 \text{NH}_3\text{OH}^+(\text{aq})$	-0,05
$\text{Pb}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Pb}(\text{s})$	-0,126
$\text{Sn}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Sn}(\text{s})$	-0,14
$\text{AgI}(\text{s}) + \text{e}^- \rightleftharpoons \text{Ag}(\text{s}) + \text{I}^-(\text{aq})$	-0,15
$\text{Ni}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Ni}(\text{s})$	-0,25
$\text{Co}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Co}(\text{s})$	-0,28
$\text{Tl}^+(\text{aq}) + \text{e}^- \rightleftharpoons \text{Tl}(\text{s})$	-0,34
$\text{PbSO}_4(\text{s}) + 2 \text{e}^- \rightleftharpoons \text{Pb}(\text{s}) + \text{SO}_4^{2-}(\text{aq})$	-0,356
$\text{Se}(\text{s}) + 2 \text{H}^+(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{H}_2\text{Se}(\text{aq})$	-0,40
$\text{Cd}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Cd}(\text{s})$	-0,403
$\text{Cr}^{3+}(\text{aq}) + \text{e}^- \rightleftharpoons \text{Cr}^{2+}(\text{aq})$	-0,41
$\text{Fe}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Fe}(\text{s})$	-0,44
$2 \text{CO}_2(\text{g}) + 2 \text{H}^+(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{H}_2\text{C}_2\text{O}_4(\text{aq})$	-0,49
$\text{HgS}(\text{s}) + 2 \text{H}^+(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Hg}(\text{liq}) + \text{H}_2\text{S}(\text{g})$	-0,72
$\text{Cr}^{3+}(\text{aq}) + 3 \text{e}^- \rightleftharpoons \text{Cr}(\text{s})$	-0,74
$\text{Zn}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Zn}(\text{s})$	-0,763
$\text{Cr}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Cr}(\text{s})$	-0,91
$\text{FeS}(\text{s}) + 2 \text{e}^- \rightleftharpoons \text{Fe}(\text{s}) + \text{S}^{2-}(\text{aq})$	-1,01
$\text{Mn}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Mn}(\text{s})$	-1,18
$\text{V}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{V}(\text{s})$	-1,18
$\text{CdS}(\text{s}) + 2 \text{e}^- \rightleftharpoons \text{Cd}(\text{s}) + \text{S}^{2-}(\text{aq})$	-1,21
$\text{ZnS}(\text{s}) + 2 \text{e}^- \rightleftharpoons \text{Zn}(\text{s}) + \text{S}^{2-}(\text{aq})$	-1,44
$\text{Al}^{3+}(\text{aq}) + 3 \text{e}^- \rightleftharpoons \text{Al}(\text{s})$	-1,66
$\text{Mg}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Mg}(\text{s})$	-2,37
$\text{Na}^+(\text{aq}) + \text{e}^- \rightleftharpoons \text{Na}(\text{s})$	-2,714
$\text{Ca}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Ca}(\text{s})$	-2,87
$\text{Sr}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Sr}(\text{s})$	-2,89
$\text{Ba}^{2+}(\text{aq}) + 2 \text{e}^- \rightleftharpoons \text{Ba}(\text{s})$	-2,90
$\text{Rb}^+(\text{aq}) + \text{e}^- \rightleftharpoons \text{Rb}(\text{s})$	-2,925
$\text{K}^+(\text{aq}) + \text{e}^- \rightleftharpoons \text{K}(\text{s})$	-2,925
$\text{Li}^+(\text{aq}) + \text{e}^- \rightleftharpoons \text{Li}(\text{s})$	-3,045

## POTENZIALI ELETTRODICI STANDARD DI RIDUZIONE A 25°C

Soluzione basica	Potenziali standard di riduzione, E° (volt)
$\text{ClO}^-(\text{aq}) + \text{H}_2\text{O} + 2 \text{e}^- \implies \text{Cl}^-(\text{aq}) + 2 \text{OH}^-(\text{aq})$	0,89
$\text{OOH}^-(\text{aq}) + \text{H}_2\text{O} + 2 \text{e}^- \implies 3 \text{OH}^-(\text{aq})$	0,88
$\text{ClO}_3^-(\text{aq}) + 3 \text{H}_2\text{O} + 6 \text{e}^- \implies \text{Cl}^-(\text{aq}) + 6 \text{OH}^-(\text{aq})$	0,62
$\text{MnO}_4^-(\text{aq}) + 2 \text{H}_2\text{O} + 3 \text{e}^- \implies \text{MnO}_2(\text{s}) + 4 \text{OH}^-(\text{aq})$	0,588
$\text{MnO}_4^-(\text{aq}) + \text{e}^- \implies \text{MnO}_4^{2-}(\text{aq})$	0,564
$\text{NiO}_2(\text{s}) + 2 \text{H}_2\text{O} + 2 \text{e}^- \implies \text{Ni}(\text{OH})_2(\text{s}) + 2 \text{OH}^-(\text{aq})$	0,49
$\text{Ag}_2\text{CrO}_4(\text{s}) + 2 \text{e}^- \implies 2 \text{Ag}(\text{s}) + \text{CrO}_4^{2-}(\text{aq})$	0,446
$\text{O}_2(\text{g}) + 2 \text{H}_2\text{O} + 4 \text{e}^- \implies 4 \text{OH}^-(\text{aq})$	0,40
$\text{ClO}_4^-(\text{aq}) + \text{H}_2\text{O} + 2 \text{e}^- \implies \text{ClO}_3^-(\text{aq}) + 2 \text{OH}^-(\text{aq})$	0,36
$\text{Ag}_2\text{O}(\text{s}) + \text{H}_2\text{O} + 2 \text{e}^- \implies 2 \text{Ag}(\text{s}) + 2 \text{OH}^-(\text{aq})$	0,34
$2 \text{NO}_2^-(\text{aq}) + 3 \text{H}_2\text{O} + 4 \text{e}^- \implies \text{N}_2\text{O}(\text{g}) + 6 \text{OH}^-(\text{aq})$	0,15
$\text{N}_2\text{H}_4(\text{aq}) + 2 \text{H}_2\text{O} + 2 \text{e}^- \implies 2 \text{NH}_3(\text{aq}) + 2 \text{OH}^-(\text{aq})$	0,10
$\text{HgO}(\text{s}) + \text{H}_2\text{O} + 2 \text{e}^- \implies \text{Hg}(\text{liq}) + 2 \text{OH}^-(\text{aq})$	0,0984
$\text{O}_2(\text{g}) + \text{H}_2\text{O} + 2 \text{e}^- \implies \text{OOH}^-(\text{aq}) + \text{OH}^-(\text{aq})$	0,076
$\text{NO}_3^-(\text{aq}) + \text{H}_2\text{O} + 2 \text{e}^- \implies \text{NO}_2^-(\text{aq}) + 2 \text{OH}^-(\text{aq})$	0,01
$\text{MnO}_2(\text{s}) + 2 \text{H}_2\text{O} + 2 \text{e}^- \implies \text{Mn}(\text{OH})_2(\text{s}) + 2 \text{OH}^-(\text{aq})$	-0,05
$\text{CrO}_4^{2-}(\text{aq}) + 4 \text{H}_2\text{O} + 3 \text{e}^- \implies \text{Cr}(\text{OH})_3(\text{s}) + 5 \text{OH}^-(\text{aq})$	-0,12
$\text{Cu}(\text{OH})_2(\text{s}) + 2 \text{e}^- \implies \text{Cu}(\text{s}) + 2 \text{OH}^-(\text{aq})$	-0,36
$\text{S}(\text{s}) + 2 \text{e}^- \implies \text{S}^{2-}(\text{aq})$	-0,48
$\text{Fe}(\text{OH})_3(\text{s}) + \text{e}^- \implies \text{Fe}(\text{OH})_2(\text{s}) + \text{OH}^-(\text{aq})$	-0,56
$2 \text{H}_2\text{O} + 2 \text{e}^- \implies \text{H}_2(\text{g}) + 2 \text{OH}^-(\text{aq})$	-0,8277
$2 \text{NO}_3^-(\text{aq}) + 2 \text{H}_2\text{O} + 2 \text{e}^- \implies \text{N}_2\text{O}_4(\text{g}) + 4 \text{OH}^-(\text{aq})$	-0,85
$\text{Fe}(\text{OH})_2(\text{s}) + 2 \text{e}^- \implies \text{Fe}(\text{s}) + 2 \text{OH}^-(\text{aq})$	-0,877
$\text{SO}_4^{2-}(\text{aq}) + \text{H}_2\text{O} + 2 \text{e}^- \implies \text{SO}_3^{2-}(\text{aq}) + 2 \text{OH}^-(\text{aq})$	-0,93
$\text{N}_2(\text{g}) + 4 \text{H}_2\text{O} + 4 \text{e}^- \implies \text{N}_2\text{H}_4(\text{aq}) + 4 \text{OH}^-(\text{aq})$	-1,15
$[\text{Zn}(\text{OH})_4]^{2-}(\text{aq}) + 2 \text{e}^- \implies \text{Zn}(\text{s}) + 4 \text{OH}^-(\text{aq})$	-1,22
$\text{Zn}(\text{OH})_2(\text{s}) + 2 \text{e}^- \implies \text{Zn}(\text{s}) + 2 \text{OH}^-(\text{aq})$	-1,245
$\text{Cr}(\text{OH})_3(\text{s}) + 3 \text{e}^- \implies \text{Cr}(\text{s}) + 3 \text{OH}^-(\text{aq})$	-1,30
$\text{SiO}_3^{2-}(\text{aq}) + 3 \text{H}_2\text{O} + 4 \text{e}^- \implies \text{Si}(\text{s}) + 6 \text{OH}^-(\text{aq})$	-1,70