

Standard Reduction Potentials of Half-Cells

(Ionic concentrations are at 1M in water @ 25^o C)

Oxidizing Agents	Reducing Agents	E^o (Volts)
$F_2(g) + 2e^- \rightarrow$	$2F^-(aq)$	+2.87
$PbO_2(s) + SO_4^{2-}(aq) + 4H^+(aq) + 2e^- \rightarrow$	$PbSO_4(s) + 2H_2O(l)$	+1.69
$MnO_4^-(aq) + 8H^+(aq) + 5e^- \rightarrow$	$Mn^{2+}(aq) + 4H_2O(l)$	+1.51
$Au^{3+}(aq) + 3e^- \rightarrow$	$Au(s)$	+1.50
$ClO_4^-(aq) + 8H^+(aq) + 8e^- \rightarrow$	$Cl^-(aq) + 4H_2O(l)$	+1.39
$Cl_2(g) + 2e^- \rightarrow$	$2Cl^-(aq)$	+1.36
$Cr_2O_7^{2-}(aq) + 14H^+(aq) + 6e^- \rightarrow$	$2Cr^{3+}(aq) + 7H_2O(l)$	+1.33
$2HNO_2(aq) + 4H^+(aq) + 4e^- \rightarrow$	$N_2O(g) + 3H_2O(l)$	+1.30
$O_2(g) + 4H^+(aq) + 4e^- \rightarrow$	$2H_2O(l)$	+1.23
$MnO_2(s) + 4H^+(aq) + 2e^- \rightarrow$	$Mn^{2+}(aq) + 2H_2O(l)$	+1.22
$Br_2(aq) + 2e^- \rightarrow$	$2Br^-(aq)$	+1.07
$Hg^{2+}(aq) + 2e^- \rightarrow$	$Hg(l)$	+0.85
$ClO^-(aq) + H_2O(l) + 2e^- \rightarrow$	$Cl^-(aq) + 2OH^-(aq)$	+0.84
$Ag^+(aq) + e^- \rightarrow$	$Ag(s)$	+0.80
$NO_3^-(aq) + 2H^+(aq) + e^- \rightarrow$	$NO_2(g) + H_2O(l)$	+0.80
$Fe^{3+}(aq) + e^- \rightarrow$	$Fe^{2+}(aq)$	+0.77
$O_2(g) + 2H^+(aq) + 2e^- \rightarrow$	$H_2O_2(l)$	+0.70
$I_2(s) + 2e^- \rightarrow$	$2I^-(aq)$	+0.54
$O_2(g) + 2H_2O(l) + 4e^- \rightarrow$	$4OH^-(aq)$	+0.40
$Cu^{2+}(aq) + 2e^- \rightarrow$	$Cu(s)$	+0.34
$SO_4^{2-}(aq) + 4H^+(aq) + 2e^- \rightarrow$	$H_2SO_3(aq) + H_2O(l)$	+0.17
$Sn^{4+}(aq) + 2e^- \rightarrow$	$Sn^{2+}(aq)$	+0.15
$S(s) + 2H^+(aq) + 2e^- \rightarrow$	$H_2S(aq)$	+0.14
$AgBr(s) + e^- \rightarrow$	$Ag(s) + Br^-(aq)$	+0.07
$2H^+(aq) + 2e^- \rightarrow$	$H_{2(g)}$	0.00
$Pb^{2+}(aq) + 2e^- \rightarrow$	$Pb(s)$	-0.13
$Sn^{2+}(aq) + 2e^- \rightarrow$	$Sn(s)$	-0.14
$AgI(s) + e^- \rightarrow$	$Ag(s) + I^-(aq)$	-0.15
$Ni^{2+}(aq) + 2e^- \rightarrow$	$Ni(s)$	-0.26
$Co^{2+}(aq) + 2e^- \rightarrow$	$Co(s)$	-0.28
$PbSO_4(s) + 2e^- \rightarrow$	$Pb(s) + SO_4^{2-}(aq)$	-0.36
$Se(s) + 2H^+(aq) + 2e^- \rightarrow$	$H_2Se(aq)$	-0.40
$Cd^{2+}(aq) + 2e^- \rightarrow$	$Cd(s)$	-0.40
$Cr^{3+}(aq) + e^- \rightarrow$	$Cr^{2+}(aq)$	-0.41
$Fe^{2+}(aq) + 2e^- \rightarrow$	$Fe(s)$	-0.45
$NO_2^-(aq) + H_2O(l) + e^- \rightarrow$	$NO(g) + 2OH^-(aq)$	-0.46
$Ag_2S(s) + 2e^- \rightarrow$	$2Ag(s) + S^{2-}(aq)$	-0.69
$Zn^{2+}(aq) + 2e^- \rightarrow$	$Zn(s)$	-0.76
$2H_2O(l) + 2e^- \rightarrow$	$H_2(g) + 2OH^-(aq)$	-0.83
$Cr^{2+}(aq) + 2e^- \rightarrow$	$Cr(s)$	-0.91
$Se(s) + 2e^- \rightarrow$	$Se^{2-}(aq)$	-0.92
$SO_4^{2-}(aq) + H_2O(l) + 2e^- \rightarrow$	$SO_3^{2-}(aq) + 2OH^-(aq)$	-0.93
$Al^{3+}(aq) + 3e^- \rightarrow$	$Al(s)$	-1.66
$Mg^{2+}(aq) + 2e^- \rightarrow$	$Mg(s)$	-2.37
$Na^+(aq) + e^- \rightarrow$	$Na(s)$	-2.71
$Ca^{2+}(aq) + 2e^- \rightarrow$	$Ca(s)$	-2.87
$Ba^{2+}(aq) + 2e^- \rightarrow$	$Ba(s)$	-2.91
$Li^+(aq) + e^- \rightarrow$	$Li(s)$	-3.04

Increasing Strength of Oxidizing Agents

Increasing Strength of Reducing Agents