

## 8.15 STANDARDNÍ ELEKTRODOVÉ POTENCIÁLY $E^\circ$ PŘI TEPLITĚ 25 °C A KOEFICIENTY JEJICH TEPLOTNÍ ZÁVISLOSTI $dE^\circ/dT$

Použité zkrátky:

Ac = acetát

Phen = fenanthrolin

Cd(Hg) = amalgám kadmia

Elektrodrová reakce	$E^\circ$ V	$dE^\circ/dT$ mV K <sup>-1</sup>
$\text{Ag}^+ + \text{e}^- = \text{Ag}$	0,799 6	-1,000
$\text{AgAc} + \text{e}^- = \text{Ag} + \text{Ac}^-$	0,643	—
$\text{AgBr} + \text{e}^- = \text{Ag} + \text{Br}^-$	0,071 33	—
$\text{Ag}_2\text{C}_2\text{O}_4 + 2\text{e}^- = 2\text{Ag} + \text{C}_2\text{O}_4^{2-}$	0,464 7	—
$\text{AgCl} + \text{e}^- = \text{Ag} + \text{Cl}^-$	0,222 2	-0,658
$\text{AgI} + \text{e}^- = \text{Ag} + \text{I}^-$	-0,152 24	—
$2\text{AgO} + \text{H}_2 + 2\text{e}^- = \text{Ag}_2\text{O} + 2\text{OH}^-$	0,607	-1,117
$\text{Ag}_2\text{O} + \text{H}_2\text{O} + 2\text{e}^- = 2\text{Ag} + 2\text{OH}^-$	0,342	-1,337
$\text{Ag}_2\text{SO}_4 + 2\text{e}^- = 2\text{Ag} + \text{SO}_4^{2-}$	0,654	—
$\text{Ag}_2\text{S} + 2\text{e}^- = 2\text{Ag} + \text{S}^{2-}$	-0,691	—
$\text{Al}^{3+} + 3\text{e}^- = \text{Al}$	-1,662	0,504
$\text{H}_2\text{AlO}_3^- + \text{H}_2\text{O} + 3\text{e}^- = \text{Al} + 4\text{OH}^-$	-2,33	-0,93
$\text{As} + 3\text{H}^+ + 3\text{e}^- = \text{AsH}_3$	-0,608	-0,05
$\text{HAsO}_2 + 3\text{H}^+ + 3\text{e}^- = \text{As} + 2\text{H}_2\text{O}$	0,248	-0,510
$\text{Au}^+ + \text{e}^- = \text{Au}$	1,692	—
$\text{Au}^{3+} + 2\text{e}^- = \text{Au}^+$	1,401	—
$\text{Au}^{3+} + 3\text{e}^- = \text{Au}$	1,498	—
$\text{Au(OH)}_3 + 3\text{H}^+ + 3\text{e}^- = \text{Au} + 3\text{H}_2\text{O}$	1,45	-0,206
$\text{AuCl}_4^- + 3\text{e}^- = \text{Au} + 4\text{Cl}^-$	1,002	—
$\text{H}_2\text{BO}_3^- + 5\text{H}_2\text{O} + 8\text{e}^- = \text{BH}_4^- + 8\text{OH}^-$	-1,24	—
$\text{H}_2\text{BO}_3^- + \text{H}_2\text{O} + 3\text{e}^- = \text{B} + 4\text{OH}^-$	-1,79	-1,147
$\text{H}_3\text{BO}_3 + 3\text{H}^+ + 3\text{e}^- = \text{B} + 3\text{H}_2\text{O}$	-0,869 8	-0,481
$\text{Ba}^{2+} + 2\text{e}^- = \text{Ba}$	-2,912	-0,395
$\text{Ba}^{2+} + 2\text{e}^- = \text{Ba(Hg)}$	-1,570	—
$\text{Ba(OH)}_2 + 2\text{e}^- = \text{Ba} + 2\text{OH}^-$	-2,99	-0,93
$\text{Be}^{2+} + 2\text{e}^- = \text{Be}$	-1,847	0,565
$\text{Bi}_2\text{O}_3 + 3\text{H}_2\text{O} + 6\text{e}^- = 2\text{Bi} + 6\text{OH}^-$	-0,46	-1,214
$\text{BiO}^+ + 2\text{H}^+ + 3\text{e}^- = \text{Bi} + \text{H}_2\text{O}$	0,320	—
$\text{Br}_2(\text{aq}) + 2\text{e}^- = 2\text{Br}^-$	1,087 3	-0,478
$\text{Br}_2(\text{l}) + 2\text{e}^- = 2\text{Br}^-$	1,066	-0,629
$\text{BrO}_3^- + 3\text{H}_2\text{O} + 6\text{e}^- = \text{Br}^- + 6\text{OH}^-$	0,61	-1,287
$\text{BrO}_3^- + 6\text{H}^+ + 6\text{e}^- = \text{Br}^- + 3\text{H}_2\text{O}$	1,423	—

## pokračování 1

Elektrodrová reakce	$E^\circ$ V	$dE^\circ/dT$ mV K <sup>-1</sup>
$\text{C} + 4\text{H}^+ + 4\text{e}^- = \text{CH}_4$	0,131 6	-0,209
$\text{CO} + 2\text{H}^+ + 2\text{e}^- = \text{C} + \text{H}_2\text{O}$	0,517 8	-1,310
$\text{CO}_2 + 4\text{H}^+ + 4\text{e}^- = \text{C} + 2\text{H}_2\text{O}$	0,207 3	-0,853
$\text{CO}_3^{2-} + 3\text{H}_2\text{O} + 4\text{e}^- = \text{C} + 6\text{OH}^-$	-0,766 7	-1,232
$\text{Ca}^{2+} + 2\text{e}^- = \text{Ca}$	-2,868	-0,175
$\text{Ca(OH)}_2 + 2\text{e}^- = \text{Ca} + 2\text{OH}^-$	-3,02	-0,965
$\text{Cd}^{2+} + 2\text{e}^- = \text{Cd}$	-0,403 0	-0,093
$\text{Cd}^{2+} + 2\text{e}^- = \text{Cd(Hg)}$	-0,352 1	—
$\text{Cd(OH)}_2 + 2\text{e}^- = \text{Cd(Hg)} + 2\text{OH}^-$	-0,809	-1,014
$\text{Ce}^{3+} + 3\text{e}^- = \text{Ce}$	-2,483	0,101
$\text{Ce}^{3+} + 3\text{e}^- = \text{Ce(Hg)}$	-1,437 3	—
$\text{Ce}^{4+} + \text{e}^- = \text{Ce}^{3+}$	1,61	—
$\text{Cl}_2 + 2\text{e}^- = 2\text{Cl}^-$	1,358 3	-1,260
$\text{HClO} + \text{H}^+ + \text{e}^- = \frac{1}{2}\text{Cl}^- + \text{H}_2\text{O}$	1,611	-0,14
$\text{ClO}^- + \text{H}_2\text{O} + 2\text{e}^- = \text{Cl}^- + 2\text{OH}^-$	0,89	-1,079
$\text{HClO}_2 + 2\text{H}^+ + 2\text{e}^- = \text{HClO} + \text{H}_2\text{O}$	1,645	-0,55
$\text{ClO}_2^- + 2\text{H}_2\text{O} + 4\text{e}^- = \text{Cl}^- + 2\text{OH}^-$	0,76	—
$\text{ClO}_3^- + 6\text{H}^+ + 6\text{e}^- = \text{Cl}^- + 3\text{H}_2\text{O}$	1,451	—
$\text{ClO}_3^- + 3\text{H}_2\text{O} + 6\text{e}^- = \text{Cl}^- + 6\text{OH}^-$	0,620	—
$\text{ClO}_4^- + 8\text{H}^+ + 8\text{e}^- = \text{Cl}^- + 4\text{H}_2\text{O}$	1,389	—
$\text{Co}^{2+} + 2\text{e}^- = \text{Co}$	-0,280	0,06
$[\text{Co}(\text{NH}_3)_6]^{3+} + \text{e}^- = [\text{Co}(\text{NH}_3)_6]^{2+}$	0,108	—
$\text{Co(OH)}_2 + 2\text{e}^- = \cdot \text{Co} + 2\text{OH}^-$	-0,730	-1,064
$\text{Co(OH)}_3 + \text{e}^- = \text{Co(OH)}_2 + \text{OH}^-$	0,170	-0,80
$\text{Cr}^{2+} + 2\text{e}^- = \text{Cr}$	-0,913	—
$\text{Cr}^{3+} + \text{e}^- = \text{Cr}^{2+}$	-0,407	—
$\text{Cr}^{3+} + 3\text{e}^- = \text{Cr}$	-0,744	0,468
$\text{Cr}_2\text{O}_7^{2-} + 14\text{H}^+ + 6\text{e}^- = 2\text{Cr}^{3+} + 7\text{H}_2\text{O}$	1,33	-1,263
$\text{Cr}(\text{OH})_3 + 3\text{e}^- = \text{Cr} + 3\text{OH}^-$	-1,48	—
$\text{Cs}^+ + \text{e}^- = \text{Cs}$	-2,92	-1,197
$\text{Cu}^+ + \text{e}^- = \text{Cu}$	0,521	-0,058
$\text{Cu}^{2+} + \text{e}^- = \text{Cu}^+$	0,153	—
$\text{Cu}^{2+} + 2\text{e}^- = \text{Cu}$	0,431 9	-0,058
$\text{Cu}^{2+} + 2\text{e}^- = \text{Cu(Hg)}$	0,345	—
$\text{Cu}_2\text{O} + \text{H}_2\text{O} + 2\text{e}^- = 2\text{Cu} + 2\text{OH}^-$	-0,360	-1,326
$\text{Cu}(\text{OH})_2 + 2\text{e}^- = \text{Cu} + 2\text{OH}^-$	-0,080	-0,725
$\text{D}^+ + \text{e}^- = \frac{1}{2}\text{D}_2$	-0,003 4	—
$2\text{D}^+ + 2\text{e}^- = \text{D}_2$	-0,044	—
$\text{Eu}^{2+} + 2\text{e}^- = \text{Eu}$	-3,395	—
$\text{Eu}^{3+} + 3\text{e}^- = \text{Eu}$	-2,407	—

pokračování 2

Elektrodrová reakce	$E^\circ$ V	$dE^\circ/dT$ mV K <sup>-1</sup>
$F_2 + 2 H^+ + 2 e^- = 2 HF$	3,06	-0,60
$F_2 + 2 e^- = 2 F^-$	2,866	-1,830
$F_2O + 2 H^+ + 4 e^- = H_2O + 2 F^-$	2,153	-1,184
$Fe^{2+} + 2 e^- = Fe$	-0,441	0,052
$Fe^{3+} + 3 e^- = Fe$	-0,037	—
$Fe^{3+} + e^- = Fe^{2+}$	0,771	1,188
$[Fe(CN)_6]^{3+} + e^- = [Fe(CN)_6]^{4+}$	0,358	—
$FeO_4^{2-} + 8 H^+ + 3 e^- = Fe^{3+} + 4 H_2O$	2,2	-0,85
$Fe(OH)_3 + e^- = Fe(OH)_2 + OH^-$	-0,56	-0,96
$Fe(OH)_2 + 2 e^- = Fe + 2 OH^-$	-0,877	-1,06
$[Fe(Phen)]_3^{3+} + e^- = [Fe(Phen)]_3^{2+}$	1,147	—
$[ferricinium]^+ + e^- = ferrocen$	0,400	—
$Ga^{3+} + 3 e^- = Ga$	-0,529	0,67
$H_2GaO_3^- + H_2O + 3 e^- = Ga + 4 OH^-$	-1,219	—
$Ge^{2+} + 2 e^- = Ge$	0,24	—
$Ge^{4+} + 4 e^- = Ge$	0,124	—
$GeO_2 + 2 H^+ + 2 e^- = GeO + H_2O$	-0,118	—
$GeO_2 + 4 H^+ + 4 e^- = Ge + 2 H_2O$	-0,15	-0,335
$2 H^+ + 2 e^- = H_2$	0,000 0	0,000
$H_2 + 2 e^- = 2 H^-$	-2,23	-1,57
$2 H_2O + 2 e^- = H_2 + 2 OH^-$	-0,827 7	-0,834 2
$H_2O_2 + 2 H^+ + 2 e^- = 2 H_2O$	1,776	—
$Hg^{2+} + 2 e^- = Hg$	0,788	—
$2 Hg^{2+} + 2 e^- = Hg_2^{2+}$	0,920	—
$Hg_2^{2+} + 2 e^- = 2 Hg$	0,797 3	—
$Hg_2(Ac)_2 + 2 e^- = 2 Hg + 2 Ac^-$	0,511 63	—
$Hg_2Br_2 + 2 e^- = 2 Hg + 2 Br^-$	0,139 2	—
$Hg_2Cl_2 + 2 e^- = 2 Hg + 2 Cl^-$	0,267 6	-0,317
$Hg_2I_2 + 2 e^- = 2 Hg + 2 I^-$	-0,040 5	—
$Hg_2O + H_2O + 2 e^- = 2 Hg + 2 OH^-$	0,123	—
$HgO + H_2O + 2 e^- = Hg + 2 OH^-$	0,097 7	-1,120
$Hg_2SO_4 + 2 e^- = 2 Hg + SO_4^{2-}$	0,612 5	—
$I_2 + 2 e^- = 2 I^-$	0,535 5	-0,148
$I_3^- + 2 e^- = 3 I^-$	0,536	—
$2 IO_3^- + 12 H^+ + 10 e^- = I_2 + 6 H_2O$	1,195	-0,364
$IO^- + H_2O + 2 e^- = I^- + 2 OH^-$	0,485	—
$2 HIO + 2 H^+ + 2 e^- = I_2 + 2 H_2O$	1,439	0,42
$H_5IO_6 + H^+ + 2 e^- = IO_3^- + 3 H_2O$	1,601	—
$In^+ + e^- = In$	-0,14	—
$In^{3+} + 3 e^- = In$	-0,338 2	0,40

pokračování 3

Elektrodrová reakce	$E^\circ$ V	$dE^\circ/dT$ mV K <sup>-1</sup>
$Ir^{3+} + 3 e^- = Ir$	1,156	—
$Ir_2O_3 + 3 H_2O + 6 e^- = 2 Ir + 6 OH^-$	0,098	—
$K^+ + e^- = K$	-2,931	—
$La^{3+} + 3 e^- = La$	-2,522	—
$La(OH)_3 + 3 e^- = La + 3 OH^-$	-2,90	-0,95
$Li^+ + e^- = Li$	-3,040 1	-0,534
$Mg^+ + e^- = Mg$	-2,70	—
$Mg^{2+} + 2 e^- = Mg$	-2,372	0,103
$Mg(OH)_2 + 2 e^- = Mg + 2 OH^-$	-2,690	-0,945
$Mn^{2+} + 2 e^- = Mn$	-1,185	-0,08
$Mn^{3+} + 3 e^- = Mn^{2+}$	1,541 5	—
$MnO_2 + 4 H^+ + 2 e^- = Mn^{2+} + 2 H_2O$	1,224	-0,661
$MnO_4^- + 4 H^+ + 3 e^- = MnO_2 + 2 H_2O$	1,679	-0,666
$MnO_4^- + 8 H^+ + 5 e^- = Mn^{2+} + 4 H_2O$	1,507	-0,666
$Mn(OH)_2 + 2 e^- = Mn + 2 OH^-$	-1,56	-1,079
$Mn(OH)_3 + e^- = Mn(OH)_2 + OH^-$	0,15	-0,903
$Mo^{3+} + 3 e^- = Mo$	-0,200	—
$N_2 + 2 H_2O + 6 H^+ + 6 e^- = 2 NH_4OH$	0,092	—
$N_2 + 8 H^+ + 6 e^- = 2 NH_4^+$	0,274 6	-0,618
$N_2O + 2 H^+ + 2 e^- = N_2 + H_2O$	1,766	—
$N_2O_4 + 2 e^- = 2 NO_2^-$	0,867	—
$N_2O_4 + 2 H^+ + 2 e^- = 2 HNO_2$	1,065	—
$N_2O_4 + H^+ + 4 e^- = 2 NO + 2 H_2$	1,035	—
$2 NO + 2 H^+ + 2 e^- = N_2O + H_2O$	1,591	—
$HNO_2 + H^+ + e^- = NO + H_2O$	0,983	—
$NO_3^- + 3 H^+ + 2 e^- = HNO_2 + H_2O$	0,934	—
$NO_3^- + 4 H^+ + 3 e^- = NO + 2 H_2O$	0,957	—
$2 NO_3^- + 4 H^+ + 2 e^- = N_2O_4 + 2 H_2O$	0,803	—
$NO_3^- + H_2O + 2 e^- = NO_2^- + 2 OH^-$	0,01	—
$Na^+ + e^- = Na$	-2,714	-0,772
$Nb^{3+} + 3 e^- = Nb$	-1,099	—
$Nb_2O_5 + 10 H^+ + 10 e^- = 2 Nb + 5 H_2O$	-0,644	-0,39
$Nd^{3+} + 3 e^- = Nd$	-2,431	—
$Ni^{2+} + 2 e^- = Ni$	-0,257	0,06
$Ni(OH)_2 + 2 e^- = Ni + 2 OH^-$	-0,72	-1,04
$NiO_2 + 2 H_2O + 2 e^- = Ni(OH)_2 + 2 OH^-$	0,490	—
$O_2 + 2 H^+ + 2 e^- = H_2O_2$	0,695	-1,033
$O_2 + 4 H^+ + 4 e^- = 2 H_2O$	1,229	-0,846
$O_2 + 2 H_2O + 2 e^- = H_2O_2 + 2 OH^-$	-0,146	—
$O_2 + 2 H_2O + 4 e^- = 4 OH^-$	0,401	-1,680

pokračování 4

Elektrodrová reakce	$E^\circ$ V	$dE^\circ/dT$ mV K <sup>-1</sup>
$O_3 + 2 H^+ + 2 e^- = O_2 + H_2O$	2,076	—
$O_3 + H_2O + 2 e^- = O_2 + 2 OH^-$	1,24	—
$P + 3 H^+ + 3 e^- = PH_3$	-0,063	-0,104
$H_2PO_2^- + e^- = P + 2 OH^-$	-1,82	—
$H_3PO_2 + H^+ + 3 e^- = P + 2 H_2O$	-0,508	—
$H_3PO_3 + 2 H^+ + 2 e^- = H_3PO_2 + H_2O$	-0,499	—
$H_3PO_3 + 3 H^+ + 3 e^- = P + 3 H_2O$	-0,454	-0,36
$H_3PO_4 + 2 H^+ + 2 e^- = H_3PO_3 + H_2O$	-0,276	-0,36
$PO_4^{3-} + 2 H_2O + 2 e^- = HPO_3^{2-} + 3 OH^-$	-1,05	—
$Pb^{2+} + 2 e^- = Pb$	-0,126 2	-0,451
$Pb^{2+} + 2 e^- = Pb(Hg)$	-0,120 5	—
$PbBr_2 + 2 e^- = Pb + 2 Br^-$	-0,284	—
$PbCl_2 + 2 e^- = Pb + 2 Cl^-$	-0,267 5	—
$PbO + H_2O + 2 e^- = Pb + 2 OH^-$	-0,580	—
$PbO_2 + 4 H^+ + 2 e^- = Pb^{2+} + 2 H_2O$	1,455	-0,238
$PbO_2 + H_2O + 2 e^- = PbO + 2 OH^-$	0,247	-1,194
$PbO_2 + SO_4^{2-} + 4 H^+ + 2 e^- = PbSO_4 + 2 H_2O$	1,691 3	0,326
$PbSO_4 + 2 e^- = Pb + SO_4^{2-}$	-0,358 8	—
$Pd^{2+} + 2 e^- = Pd$	0,987	—
$[PdCl_4]^{2-} + 2 e^- = Pd + 4 Cl^-$	0,591	—
$[PdCl_6]^{2-} + 2 e^- = [PdCl_4]^{2-} + 2 Cl^-$	1,288	—
$Pt^{2+} + 2 e^- = Pt$	1,118	—
$[PtCl_4]^{2-} + 2 e^- = Pt + 4 Cl^-$	0,755	—
$[PtCl_6]^{2-} + 2 e^- = [PtCl_4]^{2-} + 2 Cl^-$	0,68	—
$Pt(OH)_2 + 2 e^- = Pt + 2 OH^-$	0,15	-1,144
$Pt(OH)_2 + 2 H^+ + 2 e^- = Pt + 2 H_2O$	0,98	-0,310
$Ra^{2+} + 2 e^- = Ra$	-2,916	-0,59
$Rb^+ + e^- = Rb$	-2,925	-1,245
$Re^{3+} + 3 e^- = Re$	0,300	—
$ReO_4^- + 4 H^+ + 3 e^- = ReO_2 + 2 H_2O$	0,510	—
$ReO_2 + 4 H^+ + 4 e^- = Re + 2 H_2O$	0,251 3	—
$ReO_4^- + 8 H^+ + 7 e^- = Re + 4 H_2O$	0,362	-0,51
$Rh^+ + e^- = Rh$	0,600	—
$Rh^{3+} + 3 e^- = Rh$	0,788	—
$[RhCl_6]^{3-} + 3 e^- = Rh + 6 Cl^-$	0,431	—
$Ru^{2+} + 2 e^- = Ru$	0,455	—
$Ru^{3+} + e^- = Ru^{2+}$	0,248 7	—
$RuO_2 + 4 H^+ + 2 e^- = Ru^{2+} + 2 H_2O$	1,120	—
$S + 2 e^- = S^{2-}$	-0,476 3	—
$S + 2 H^+ + 2 e^- = H_2S(aq)$	0,142	0,209

pokračování 5

Elektrodrová reakce	$E^\circ$ V	$dE^\circ/dT$ mV K <sup>-1</sup>
$S + H_2O + 2 e^- = HS^- + OH^-$	-0,478	—
$S_2O_6^{2-} + 4 H^+ + 2 e^- = 2 H_2SO_3$	0,564	—
$S_2O_8^{2-} + 2 e^- = 2 SO_4^{2-}$	2,010	-1,26
$H_2SO_3 + 4 H^+ + 4 e^- = 2 S + 3 H_2O$	0,449	-0,66
$SO_4^{2-} + 4 H^+ + 2 e^- = H_2SO_3 + H_2O$	0,172	—
$SO_4^{2-} + H_2O + 2 e^- = SO_3^{2-} + 2 OH^-$	-0,93	—
$Sb + 3 H^+ + 3 e^- = SbH_3$	-0,510	-0,06
$Sb_2O_3 + 6 H^+ + 6 e^- = 2 Sb + 3 H_2O$	0,152	-0,375
$Se^{3+} + 3 e^- = Se$	-2,077	0,25
$Se + 2 e^- = Se^{2-}$	-0,924	-0,89
$Se + 2 H^+ + 2 e^- = H_2Se(aq)$	-0,399	-0,028
$H_2SeO_3 + 4 H^+ + 4 e^- = Se + 3 H_2O$	0,740	-0,250
$SeO_3^{2-} + 3 H_2O + 4 e^- = Se + 6 OH^-$	-0,366	-1,318
$SeO_4^{2-} + H_2O + 2 e^- = SeO_3^{2-} + 2 OH^-$	0,05	-1,187
$SiF_6^{2-} + 4 e^- = Si + 6 F^-$	-1,24	—
$SiO_3^{2-} + 3 H_2O + 4 e^- = Si + 6 OH^-$	-1,697	—
$SiO_2 + 4 H^+ + 4 e^- = Si + 2 H_2O$	-0,857	-0,374
$Si + 4 H^+ + 4 e^- = SiH_4$	0,102	-0,197
$Sn^{2+} + 2 e^- = Sn$	-0,136	-0,282
$Sn^{4+} + 2 e^- = Sn^{2+}$	0,151	—
$HSnO_2^- + H_2O + 2 e^- = Sn + 2 OH^-$	-0,909	—
$Sr^{2+} + 2 e^- = Sr$	-2,888	-0,191
$Sr^{2+} + 2 e^- = Sr(Hg)$	-1,793	—
$Sr(OH)_2 + 2 e^- = Sr + 2 OH^-$	-2,88	-0,96
$Ta_2O_5 + 10 H^+ + 10 e^- = 5 Ta + 5 H_2O$	-0,750	-0,377
$Tc^{2+} + 2 e^- = Tc$	0,400	—
$TcO_4^- + 4 H^+ + 3 e^- = TcO_2 + 2 H_2O$	0,782	—
$Te + 2 e^- = Te^{2-}$	-1,143	—
$Te + 2 H^+ + 2 e^- = H_2Te$	-0,718	0,280
$TeO_2 + 4 H^+ + 4 e^- = Te + 2 H_2O$	0,593	-0,370
$H_6TeO_6 + 2 H^+ + 2 e^- = TeO_2 + 4 H_2O$	1,02	0,13
$Th^{4+} + 4 e^- = Th$	-1,899	—
$ThO_2 + 4 H^+ + 4 e^- = Th + 2 H_2O$	-1,789	—
$Ti^{2+} + 2 e^- = Ti$	-1,628	—
$Ti^{3+} + e^- = Ti^{2+}$	-0,368	—
$Tl^+ + e^- = Tl$	-0,336 6	-1,327
$Tl^+ + e^- = Tl(Hg)$	-0,333 8	—
$Tl^{3+} + 2 e^- = Tl^+$	1,252	0,89
$TlCl + e^- = Tl + Cl^-$	-0,556 8	—
$TlOH + e^- = Tl + OH^-$	-0,34	—

Elektrodová reakce	$E^\circ$ V	$\frac{dE^\circ/dT}{\text{mV K}^{-1}}$
$\text{U}^{3+} + 3 e^- = \text{U}$	-1,798	—
$\text{U}^{4+} + e^- = \text{U}^{3+}$	-0,607	—
$\text{UO}_2 + 2 \text{H}_2\text{O} + 4 e^- = \text{U} + 4 \text{OH}^-$	-2,39	-1,220
$\text{UO}_4^{2-} + 4 \text{H}_2\text{O} + 2 e^- = \text{U(OH)}_4 + 4 \text{OH}^-$	-1,618	—
$\text{UO}_2^{2+} + 4 \text{H}^+ + 2 e^- = \text{U}^{4+} + 2 \text{H}_2\text{O}$	0,327	-1,27
$\text{V}^{2+} + 2 e^- = \text{V}$	-1,175	—
$\text{V}^{3+} + e^- = \text{V}^{2+}$	-0,255	—
$\text{VO}^{2+} + 2 \text{H}^+ + e^- = \text{V}^{2+} + \text{H}_2\text{O}$	0,337	—
$\text{WO}_2 + 4 \text{H}^+ + 4 e^- = \text{W} + 2 \text{H}_2\text{O}$	-0,119	—
$\text{WO}_3 + 6 \text{H}^+ + 6 e^- = \text{W} + 3 \text{H}_2\text{O}$	-0,090	-0,40
$\text{Y}^{3+} + 3 e^- = \text{Y}$	-2,372	0,18
$\text{Y(OH)}_3 + 3 e^- = \text{Y} + 3 \text{OH}^-$	-2,81	-0,95
$\text{Zn}^{2+} + 2 e^- = \text{Zn}$	-0,761 8	0,091
$\text{Zn(OH)}_2 + 2 e^- = \text{Zn} + 2 \text{OH}^-$	-1,245	-1,002
$\text{ZnO}_2^{2-} + 2 \text{H}_2\text{O} + 2 e^- = \text{Zn} + 4 \text{OH}^-$	-1,215	—
$\text{ZnSO}_4 + 2 e^- = \text{Zn(Hg)} + \text{SO}_4^{2-}$	-0,799 3	—
$\text{Zr}^{4+} + 4 e^- = \text{Zr}$	-1,529	—
$\text{H}_2\text{ZrO}_3 + \text{H}_2\text{O} + 4 e^- = \text{Zr} + 4 \text{OH}^-$	-2,36	-1,11
$\text{ZrO}_2 + 4 \text{H}^+ + 4 e^- = \text{Zr} + 2 \text{H}_2\text{O}$	-1,553	—

## 8.16 ELEKTRODOVÉ POTENCIÁLY NĚKTERÝCH REFERENTNÍCH ELEKTROD PŘI RŮZNÝCH TEPLITÁCH

### Elektroda kalomelová



Elektrolyt	$t/\text{°C}$				
	10	15	20	25	30
0,1M-KCl	0,336 2	0,336 1	0,335 8	0,335 6	0,335 4
1,0M-KCl	0,286 8	0,285 2	0,284 4	0,283 0	0,281 5
nas. KCl	0,253 9	0,251 1	0,247 8	0,244 5	0,241 2

### Elektroda argentchloridová



Elektrolyt	$t/\text{°C}$				
	10	15	20	25	30
0,1M-KCl	—	—	—	0,288	—
1,0M-KCl	0,231 4	0,228 6	0,225 6	0,222 3	0,219
nas. KCl	—	—	—	0,198	—

### Elektroda merkurosulfátová



Elektrolyt	$t/\text{°C}$				
	10	15	20	25	30
$\text{H}_2\text{SO}_4 (a_{\text{SO}_4^{2-}} = 1)$	0,627 0	0,623 1	0,619 3	0,615 2	0,611 1
0,5M-K <sub>2</sub> SO <sub>4</sub>	—	—	—	0,682	—
nas. K <sub>2</sub> SO <sub>4</sub>	—	—	—	0,650	—

### Elektroda merkurioxidová



Elektrolyt	$t/\text{°C}$				
	10	15	20	25	30
0,1M-NaOH	—	—	—	0,165	—
1,0M-NaOH	—	—	—	0,140	—