Correction to "Non-Bornian Theory of the Gibbs Energy of Ion Transfer between Two Immiscible Liquids"

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The manuscript was published with errors in Tables 3 and 4. The corrected Tables 3 and 4 are provided.

Table 3. Calculations of Standard Gibbs Energies of Transfer of Ions from NB to W (25 °C) (Revised; Revisions Are Shown in Bold)

ion	E^a (10^{10} V m^{-1})	$\Delta G_{tr}^{o,O\to W}$(z-dep)^b (kJ mol^{-1})	$\Delta G_{tr}^{o,O\to W}$(calc)^c (kJ mol^{-1})
(hydrated cations)			
Li$^+$	1.17 (27.0)^d	−61.5	−37.9 (+0.3)^e
Na$^+$	1.53 (10.7)	−50.9	−33.0 (+1.2)
K$^+$	2.97 (6.23)	−38.3	−29.0 (−5.5)
Rb$^+$	3.19 (5.23)	−30.7	−22.1 (−2.7)
Cs$^+$	3.38 (4.39)	−19.6	−11.5 (+3.9)
Ca^{2+}	1.32 (22.2)	−114.1	−72.5 (−5.2)
Ba^{2+}	1.52 (13.0)	−93.1	−57.1 (+4.7)
(nonhydrated cations)			
Me$_4$N$^+$	1.85	−18.3	−3.5 (−0.1)
Et$_4$N$^+$	1.27	−15.7	5.9 (+0.6)
n-Pr$_4$N$^+$	1.00	−9.7	17.7 (+1.3)
n-Bu$_4$N$^+$	0.84	−2.9	29.6 (+3.1)
Ph$_4$As$^+$	0.79	0.1	34.7 (−1.2)
[Ni(bpy)$_3$]$^{2+}$	1.04	−21.6	31.4 (+0.9)
[Ni(phen)$_3$]$^{2+}$	0.97	−17.3	39.1 (−2.2)
[Fe(phen)$_3$]$^{2+}$	0.98	−18.1	37.7 (−6.3)
(hydrated anions)			
Cl$^-$	−1.39 (−5.16)^d	**−58.1**	**−38.4 (−0.2)**
Br$^-$	−1.89 (−4.35)	**−41.8**	**−27.2 (+0.6)**
I$^-$	−2.35 (−3.39)	**−30.1**	**−18.4 (+0.0)**
SCN$^-$	−2.13 (−3.17)	**−28.7**	**−15.8 (+0.0)**
NO$_3^-$	−2.03 (−4.03)	**−39.3**	**−25.8 (−0.6)**
(nonhydrated anions)			
ClO$_4^-$	−2.59	−18.4	−7.7 (+0.2)
IO$_4^-$	−2.32	−20.3	−8.9 (−2.4)
2,4-dinitrophenol$^-$	−1.45	−19.8	−0.9 (+4.8)
2,4,6-trinitrophenol$^-$	−1.31	−17.7	3.3 (−3.4)
Ph$_4$B$^-$	−0.81	1.6	35.4 (−0.5)
(polyanions)			
α,β-[XM$_{12}$O$_{40}$]$^{4-}$	−1.84	−38.8	21.0 (−4.9)
α,β-[XM$_{12}$O$_{40}$]$^{3-}$	−1.38	11.7	71.5 (−0.3)
α-[X$_2$M$_{18}$O$_{62}$]$^{6-}$	−2.06	−93.3	−13.3 (−16.2)
α-[S$_2$Mo$_{18}$O$_{62}$]$^{4-}$	−1.37	16.3	96.4 (−7.4)
[S$_2$VMo$_{17}$O$_{62}$]$^{5-}$	−1.71	−31.6	48.5 (+7.5)
[P$_2$Mo$_{18}$O$_{61}$]$^{4-}$	−1.39	14.1	93.2 (+1.0)
[Mo$_6$O$_{19}$]$^{2-}$	−1.51	−0.5	35.9 (+4.3)
[VMo$_5$O$_{19}$]$^{3-}$	−2.26	−62.2	−25.7 (+8.7)
α-[Mo$_8$O$_{26}$]$^{4-}$	−2.45	−101.1	−56.3 (−3.4)

^{a}Evaluated from eq 7. For the hydrated ions, their hydrated radii were employed for the value of r. ^{b}Calculated using eqs 24, 28, 25, 29, and 30 for hydrated cations, nonhydrated cations, hydrated anions, nonhydrated anions, and polyanions, respectively. ^{c}Obtained by adding the calculated values of $\Delta G_{tr}^{o,O\to W}$(z-dep) to the values of $\Delta G_{tr}^{o,O\to W}$(z-indep) in Table 2. ^{d}The values in parentheses are surface field strengths of the bare ions. ^{e}The values in parentheses show the deviations from the observed values.

Table 4. Observed and Calculated Values of Standard Potentials of Transfer of Ions at the NB/W Interface (25 °C) (Revised; Revisions Are Shown in Bold)

ion	$\Delta_O^W\phi°$ (obs)[a] (V)	$\Delta_O^W\phi°$ (calc)[b] (V)	deviation (V)
(hydrated cations)			
Li$^+$	0.395	0.393	−0.002
Na$^+$	0.354	0.342	−0.012
K$^+$	0.242	0.301	+0.059
Rb$^+$	0.201	0.229	+0.028
Cs$^+$	0.159	0.119	−0.040
Ca^{2+}	0.349	0.376	+0.027
Ba^{2+}	0.320	0.296	−0.024
(nonhydrated cations)			
Me$_4$N$^+$	0.035	0.036	+0.001
Et$_4$N$^+$	−0.055	−0.061	−0.006
n-Pr$_4$N$^+$	−0.170	−0.184	−0.014
n-Bu$_4$N$^+$	−0.275	−0.307	−0.032
Ph$_4$As$^+$	−0.372	−0.360	+0.012
[Ni(bpy)$_3$]$^{2+}$	−0.158	−0.163	−0.005
[Ni(phen)$_3$]$^{2+}$	−0.214	−0.203	+0.011
[Fe(phen)$_3$]$^{2+}$	−0.228	−0.195	+0.033
(hydrated anions)			
Cl$^-$	**−0.396**	**−0.398**	**−0.002**
Br$^-$	**−0.288**	**−0.282**	**+0.006**
I$^-$	**−0.191**	**−0.190**	**+0.001**
SCN$^-$	**−0.164**	**−0.164**	**+0.000**
NO$_3^-$	**−0.261**	**−0.267**	**−0.006**
(nonhydrated anions)			
ClO$_4^-$	**−0.082**	−0.080	**+0.002**
IO$_4^-$	−0.07	−0.087	−0.017
2,4-dinitrophenol$^-$	−0.059	−0.009	+0.050
2,4,6-trinitrophenol$^-$	0.069	0.034	−0.035
Ph$_4$B$^-$	0.372	0.367	−0.005
(polyanions)			
α,β-[XM$_{12}$O$_{40}$]$^{4-}$	0.067	0.054	−0.013
α,β-[XM$_{12}$O$_{40}$]$^{3-}$	0.248	0.247	−0.001
α-[X$_2$M$_{18}$O$_{62}$]$^{6-}$	0.005	−0.023	−0.028
α-[S$_2$Mo$_{18}$O$_{62}$]$^{4-}$	0.269	0.250	−0.019
[S$_2$VMo$_{17}$O$_{62}$]$^{5-}$	0.085	0.100	+0.015
[P$_2$Mo$_{18}$O$_{61}$]$^{4-}$	0.239	0.241	+0.002
[Mo$_6$O$_{19}$]$^{2-}$	0.164	0.186	+0.022
[VMo$_5$O$_{19}$]$^{3-}$	−0.119	−0.089	+0.030
α-[Mo$_8$O$_{26}$]$^{4-}$	−0.137	−0.146	−0.009

[a]Literature values, which are related to those of $\Delta G_{tr}^{o,O\to W}$ (shown in Table 2) by eq 31. [b]From the calculated values of $\Delta G_{tr}^{o,O\to W}$ shown in Table 3.