Additions and Corrections

Determination of Standard Gibbs Energies of Transfer of Organic Anions across the Water/Nitrobenzene Interface

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Some of the published data in Table 3 of the paper cited above are not correct because contamination of the decamethylferrocene caused an erroneous electrode response, i.e., a shift of the voltammetric peak potentials. Careful re-examination of all systems using decamethylferrocene of highest purity led to the data given in Table 1 of this correction. The new $\Delta G^{\theta}_{X^-(W\to NB)}$ data deviate from the erroneously reported ones especially in the case of the anions valeriate, capronate, and oenanthate. For the other anions listed in Table 1, the deviations are marginal; however, we feel that the correct values must be reported. The technique used provides a standard deviation ($n = 12$) of the free energies of 0.16 kJ mol^{-1}. As log(P) values (P is the partition coefficient) are usually used for assessing the liphophilicity of compounds, it is worth mentioning that the new data of $\Delta G^{\theta}_{X^-(W\to NB)}$ give only slightly different new log(P) values. Re-examination of all other data reported in the previous publication proved that they are completely correct.

Table 1. Peak Potentials of the Net SW Voltammetric Response, Standard Potential Differences at the W/NB Liquid Interface, and the Standard Gibbs Energies of the Transfer of the Anions of Aliphatic Monocarboxylic Acids[a]

anion	E_p/mV vs Ag/AgCl	$\Delta_W^{NB}\varphi^{\theta}_{X^-}$/mV	$\Delta G^{\theta}_{X^-(W\to NB)}$/kJ mol^{-1} new data	old data
formiate	58	317.10	30.60	28.07
acetate	52	311.92	30.10	29.14
propionate	29	289.94	27.98	27.30
butyrate	11	272.02	26.25	27.86
valeriate	−31	231.09	22.30	26.82
capronate	−75	187.56	18.10	22.94
oenanthate	−115	147.15	14.20	17.88
caprylate	−125	130.98	12.64	13.78
pelargonate	−120	138.86	13.40	13.02
caprinate	−118	140.93	13.60	12.71

[a] The concentration of the anions in the aqueous phase was 1 mol dm^{-3}. All other conditions were the same as in Figure 1. The values of $\Delta_W^{NB}\varphi^{\theta}_{X^-}$ and $\Delta G^{\theta}_{X^-(W\to NB)}$ are estimated using the calibration line in Figure 2.