ERRATUM

Isopiestic Determination of the Osmotic and Activity Coefficients of Li$_2$SO$_4$(aq) at T = 298.15 and 323.15 K, and Representation with an Extended Ion-Interaction (Pitzer) Model

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The article reported a value of the solubility product, $K_s = 4\{(m(\text{sat.})/\text{mol·kg}^{-1}\}^3 \times \{\gamma_\pm(\text{sat.})\}^3 a_w(\text{sat.}) = 2.617 \pm 0.193$ at 298.15 K for the thermodynamically stable phase Li$_2$SO$_4$·H$_2$O(cr) in equilibrium with its saturated solution. The last two digits of K_s were inadvertently transposed. The subsequent calculations of the standard Gibbs energy of solution and standard entropy of solution, the standard Gibbs energy of formation, and the standard entropy of Li$_2$SO$_4$·H$_2$O(cr) were all affected. The standard enthalpies of solution and formation of Li$_2$SO$_4$·H$_2$O(cr) are not affected.

The corrected results are $K_s = 2.671_2 \pm 0.193$, $\Delta_{sol}G_m^o$(Li$_2$SO$_4$·H$_2$O, cr, 298.15 K) $= -(2.436 \pm 0.179)$ kJ·mol^{-1}, $\Delta_{sol}H_m^o$(Li$_2$SO$_4$·H$_2$O, cr, 298.15 K) $= -(17.86 \pm 0.15)$ kJ·mol^{-1} (unchanged), and $\Delta_{sol}S_m^o$(Li$_2$SO$_4$·H$_2$O, cr, 298.15 K) $= -(51.73 \pm 0.79)$ J·K^{-1}·mol^{-1}.

Combining these results with the CODATA recommended values for the standard thermodynamic properties of Li$^+$(aq), SO$_4^{2-}$ (aq), and H$_2$O(l) then yields $\Delta_f G_m^o$(Li$_2$SO$_4$·H$_2$O, cr, 298.15 K) $= -(1564.54 \pm 0.51)$ kJ·mol^{-1}, $\Delta_f H_m^o$(Li$_2$SO$_4$·H$_2$O, cr, 298.15 K) $= -(1734.25 \pm 0.46)$ kJ·mol^{-1} (unchanged), and S_m^o(Li$_2$SO$_4$·H$_2$O, cr, 298.15 K) $= (164.66 \pm 0.94)$ J·K^{-1}·mol^{-1}.

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The corrections in the evaluated standard thermodynamic properties are nearly insignificant, being much less than the assigned uncertainties.