Erratum to: Experimental Determination of Third Derivative of the Gibbs Free Energy, G II: Differential Pressure Perturbation Calorimetry

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In an attempt at refining the methodology described in this article, we came to realize recently that there are inadvertent errors in Eq. 7 and Eq. 8. The right hand side of Eq. 7 should have an extra term $-\Delta V$ and that of Eq. 8 $+(\Delta V/V)$. Namely, Eq. 7 and Eq. 8 should read:

$$-\Delta(\delta H/\delta p) = VT\Delta\alpha_p + \Delta VT\alpha_p - \Delta V, \quad (7)$$

$$T\Delta\alpha_p = \Delta^{SV}\delta = -\frac{1}{V}\left(\frac{\Delta\delta H}{\delta p}\right) - \frac{\Delta V}{V}T\alpha_p + (\Delta V/V). \quad (8)$$

Since we determined the apparatus constant including this error by using sample pairs with known $\Delta\alpha_p$, the final results shown in Fig. 5 suffer little effect. Thus, our conclusion that the basic concept of the project is feasible remains valid.

We also came to realize that the “effective” volumes of the two sample cells could be another issue. Namely, the sample volumes must be such that are actually “felt” by the

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thermo-module, and may not be the same as determined gravimetrically. When our attempt at refining the present methodology taking these and other possible issues into account ends successfully, another manuscript will be submitted to this journal.