

Heat Capacity Changes for the Ionization of Water from High Dilution Calorimetric Measurements at High Temperatures

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In the literature, there is an apparent disagreement in the standard heat capacity changes for the ionization of water calculated from potentiometric [1] and calorimetric measurements [2] at temperatures $T > 473$ K. Others [3, 4, 5] have drawn invalid conclusions based on incomplete sets of data available at the time about this apparent disagreement. Results from the present study on standard heat capacity changes for the ionization of water, obtained from corresponding values from high dilution calorimetric measurements on HCl(aq) [6], NaCl(aq) [7], NaOH(aq) [5, 8] and using ionic additivity, indicate that in fact there are no disagreements between the values of the standard heat capacity changes for the ionization of water calculated from potentiometric and those calculated from calorimetric measurements. However, the apparent disagreement is the result of the model chosen to represent the data [9].

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