The Effect of Temperature on the Activity Coefficients of Two Macrocyclic Aminals in Aqueous Solution

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The activity coefficients in aqueous solution were determined from osmotic coefficients of the solvent, using isopiestic measurements [1,2]. The solutes were 1,3,5,7-Tetrazatricyclo (3.3.1.13,7) decane and 1,3,6,8-Tetrazatricyclo (4.4.1.13,8) dodecane whose synthesis has been recently reported [3]. The temperatures were 288.15, 293.15 and 298.15 K. The temperature dependence of the Gibbs free molar energy of excess was calculated. A previous study from this laboratory has shown very large values for the solubilities of the two solutes studied. The experimental results are discussed taking into account the structure of water and the nature of the aminals.

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[3] A. Rivera, O.L. Torres, J.D. Leyton, M.S. Morales-Rios, P. Joseph-Nathan, **32**, 1407 (2002).