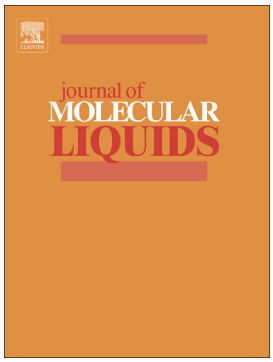

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VOLUMETRIC AND ACOUSTIC PROPERTIES OF TWO SODIUM SULFONATERESORCIN[4]ARENES IN WATER AND DIMETHYLSULFOXIDE

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Keywords: sodium sulfonateresorcin[4]arenes, partial molar volume, molar compressibility, aqueous solutions, non-aqueous solutions, solvation numbers.

Abstract

Apparent molal volumes, apparent isentropic compressibilities and solvation numbers of two sodium sulfonateresorcin[4]arenes, Na_4BRA and Na_4SRA in aqueous and DMSO solutions, were determined from density and speed of sound measurements, over the temperature range (278.15 to 308.15) K, at 5 K intervals. The dependence of the volumes on the molality was correlated to the Redlich-Rosenfeld-Meyer equation for aqueous solutions and the Masson type equation for DMSO solutions. The parameters derived from these equations were interpreted according to hydrophobic and hydrophilic hydration and the ion-ion interactions. The standard (infinite dilution) partial molar properties and their dependence on the temperature were determined. In addition, the transfer properties of the