

A Thermodynamic Study of the Association of K^+ and Rb^+ Cations with 1,3-Bis(benzyloxy)-*p*-*tert*-butylcalix[4]crown-5 in a $CHCl_3$ –Methanol Mixture

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The conductivity during the complexation reaction between K^+ or Rb^+ and 1,3-bis(benzyloxy)-*p*-*tert*-butylcalix[4]crown-5 in a $CHCl_3$ -methanol mixture at 288 – 303 K has been measured. The conductivity data were analyzed using a computer program based on 1 : 1 stoichiometry. The stability constants of the resulting complexes were determined, indicating that K^+ is more stable than Rb^+ in the solvents used. The ΔH and ΔS values for the complexation processes were determined from the temperature dependence of the complexation constants. Their significance as well as the solvent effect is discussed.

Key words: Calix[4]crown-5; Complexation; Conductivity; Thermodynamics.