Electrical Conductivity and Thermodynamic Studies on Sodium Diethyldithiocarbamate in Methanol at Different Temperatures

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The conductance data of sodium diethyldithiocarbamate (NaDDC) in methanol at different temperatures (25, 30, 35 and 40°C) are presented. Results were construed by applying the Fuoss-Onsager equation to determine the characteristic parameters: equivalent conductance at infinite dilution Λ_o , association constant K_A , the distance of closest approach of ions $\bar{a}$. After calculation of the electrostatic Stokes' radii (R^+ and R^-), their sum is likened to $\bar{a}$ value. Thermodynamic functions such Gibbs free energy change ΔG° , enthalpy change ΔH° , change in entropy ΔS° and the activation energy (ΔE_s) were estimated.

Keywords: Sodium diethyldithiocarbamate, equivalent conductance at infinite dilution (Λ_o), ion association, activation energy and thermodynamic functions.

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