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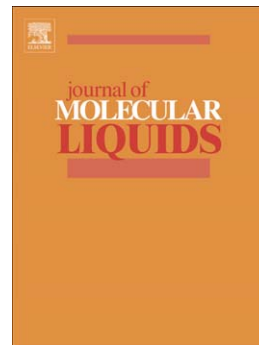
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Volumetric and Viscosities Properties of Aqueous Solutions of some Monoalkanolamines

Faisal I. Chowdhury^{a,b}, Shamim Akhtar^{*b}, M.A. Saleh^{b†}, M.U. Khandaker^c, Y.M. Amin^c,
A.K. Arof^{*a}

^aCenter for Ionics University of Malaya, Department of Physics, University of Malaya,
50603 Kuala Lumpur, Malaysia

^bDepartment of Chemistry, University of Chittagong, Chittagong-4331, Bangladesh

^cDepartment of Physics, University of Malaya, 50603 Kuala Lumpur, Malaysia

Abstract

Density (ρ) and viscosities of some aqueous solutions of methylethanolamine (MEA), ethylethanolamine (EEA), dimethylethanolamine (DMEA), 3-(dimethylamino)-1-propanol (DMPA-1) and 3-(Dimethylamino)-2-propanol (DMPA-2) were determined from 303.15 to 323.15 K at different compositions in the range $0 \leq x_1 \leq 1$, where x_1 is the mole fraction of alkanolamines. Excess molar volumes (V_m^E) are negative for all systems in the whole range of composition at all temperatures with minima occurring at $x_1 \sim 0.35$ to 0.40 . The depth of minima varies as, DMPA-2+W > DMEA+W > DMPA-1+W > EEA+W > MEA+W. The $\Delta\eta$ values have been found to be positive for all systems in the whole range of composition at all temperatures with large maxima at aqueous region. The heights of maxima for η as well as $\Delta\eta$ vary as EEA+W > DMPA-1+W > MEA+W > DMEA+W > DMPA-2+W. The mixture properties and their corresponding excess/deviation data have been fitted well with the polynomial equations and Redlich-Kister polynomial equations, respectively.

Keywords: Densities; Excess molar volumes, Viscosities; Deviation in viscosities; Strength of association; Hydrophobicity;

* Corresponding author. E-mail: shamim3332000@yahoo.com (S.A.); faisal.cubd@yahoo.com(F.I.C.); akarof@um.edu.my (A.K.A.)

† Deceased.

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