Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures

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Abstract

The vapour pressures of (sec-butylamine + water), (cyclohexylamine + water) binary mixtures, and of pure sec-butylamine and cyclohexylamine components were measured by means of two static devices at temperatures between 293 (or 273) K and 363 K. The data were correlated with the Antoine equation. From these data, excess Gibbs functions (G^E) were calculated for several constant temperatures and fitted to a fourth-order Redlich–Kister equation using the Barker's method. The (cyclohexylamine + water) system shows positive azeotropic behaviour for all investigated temperatures. The two binary mixtures exhibit positive deviations in G^E for all investigated temperatures over the whole composition range.

Keywords