LIQUID-LIQUID COEXISTENCE CURVE OF A METHANOL-HEXANE SOLUTION UNDER GRAVITY

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S u m m a r y

Simultaneous investigations of the temperature and high-altitude dependences of the refractive index $n(T, z)$ and refractive index gradient $dn/dz(T, z)$ of an inhomogeneous binary methanol-hexane solution under gravity near the critical consolute temperature have been carried out by using the complex refractometry method. It has been found that the temperature dependence of the refractive index $n(T)$ is a nonmonotonic function of temperature in the lower phase. Whereas the temperature dependence of the solution density $\rho_s(T)$ is a nonmonotonic function of temperature in the upper phase. Such a qualitatively different temperature behaviour is explained by the influence of two factors: by the volume expansion of the solution when the temperature of the system increases and by a change of the solution concentration in both phases. On the basis of the fluctuation theory of phase transitions and the Van der Waals model of the gas of fluctuations, the obtained data have been used for calculating the equation for a coexistence curve for the investigated solution in the terms of various order parameters.