EFFECTIVE TWO-FLUID MODEL FOR THEORETICAL EQUATION OF STATE OF TERNARY MIXTURE

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Abstract: The paper presents a new effective two-fluid model based on the equation of state of binary mixtures. This model assumes the separation of all the components into two groups with similar well-depth parameters. Thus, the multicomponent mixture is represented as an effective two-component fluid. This technique reduces the error introduced in the calculation of the thermodynamic parameters of multicomponent mixtures with significantly different well-depth parameters by effective one-fluid model. Calculations of ternary mixtures $NH_3-H_2-N_2$ of varying composition were carried out. It is shown that the results calculated with the proposed method are in better agreement with the experimental data than similar calculations based on the use of effective one-fluid model vdW1f.

Keywords: perturbation theory; effective one-fluid model; intermolecular interaction potential Exp-6; thermodynamic parameters of state

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