The thermodynamic properties of normal heptane in the critical region

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Abstract

An equation of state that predicts the thermodynamic behavior of n-heptane is presented. This equation takes into account the crossover from singular thermodynamic behavior asymptotically close to the critical point to regular thermodynamic behavior far away from the critical point. The formulated equation based on the crossover transformation to a truncated classical Landau expansion. The equation is capable of representing the thermodynamic properties of n-heptane wide range of temperatures densities around the critical point. Comparisons of the pressure P-□-T data measured by Kurumov and the isochoric specific heat data measured by Amirkhanov et al. of the Russian groups are also presented.

Keywords: Equation of state, n-heptane, thermodynamic, pressure, specific heat.