

THERMODYNAMIC POTENTIAL DENSITY  
OF A NONUNIFORM SYSTEM

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S u m m a r y

A thermodynamic potential density is considered to calculate the corresponding thermodynamic potential far from the second-order phase transition. On the basis of a statistical mechanical approach, the authors demonstrate that the internal energy and enthalpy densities exist in the vicinity of the critical point under any smooth external field in contrast to those of entropy, free energy, and Gibbs thermodynamic potential.