

Phase Diagram Including a Negative Pressure Region for a Thermotropic Liquid Crystal in a Metal Berthelot Tube

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Abstract : Thermodynamic properties of liquids under negative pressures are interesting and important in fields of science and technology. Here, phase transitions of a thermotropic liquid crystal are investigated in a range from positive to negative pressures with a metal Berthelot tube using a commercial pressure transducer. Two co-existing lines, namely crystal (Kr) - nematic (N), and isotropic liquid (I) - nematic (N) lines, were drawn in a pressure - temperature plane. The I-N line was drawn to ca. -5 (MPa).

Keywords : Berthelot method, liquid crystal, negative pressure, phase transitions

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