

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

**Authors :** K. Hiro, T. Wada

**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

**Conference Title :** ICMSEM 2014 : International Conference on Materials Science, Engineering and Manufacturing

**Conference Location :** Paris, France

**Conference Dates :** July 21-22, 2014