

Electric permittivity anomaly close to the critical consolute point of a nitrobenzene + octane liquid mixture.

Autorzy

Kazimierz Orzechowski

Magdalena Kosmowska

Mariusz Adamczyk

Rok wydania

2012

Czasopismo

Journal of Physical Chemistry
B

Numer woluminu

116

Strony

2492-2497

DOI

10.1021/jp2098203

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Electric permittivity and density were measured in a nitrobenzene and octane mixture in the vicinity of the upper critical consolute point. Measurements were conducted in the one-phase region, at the critical concentration. The possibility of stirring in the course of measurements allowed us to check if the density and concentration gradients had any influence on the obtained results. No signs of the presence of the gradients mentioned above were found. Using the data obtained in the reported measurements, different methods of the fitting of the equation describing the permittivity anomaly were tested. The calculation of a reliable value of the critical amplitude, used to estimate the critical temperature shift under the influence of the electric field, was of particular interest. The derivative ($\partial T_c / \partial E^2$) was found to be $(-3.9 \pm 0.3) \times 10^{-16} \text{ K m}^2 \text{ V}^{-2}$.

Adres publiczny

<https://doi.org/10.1021/jp2098203>

Strona internetowa wydawcy

<https://www.acs.org/content/acs/en.html>