The Anomalous Viscometric Behavior of Aot Water-In-Oil Microemulsions

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GRIN Verlag. Paperback. Book Condition: New. Paperback. 60 pages. Dimensions: 8.3in. x 5.8in. x 0.1in.Diploma Thesis from the year 2007 in the subject Chemistry - Physical and Theoretical Chemistry, grade: 1, 0, University Karlsruhe (TH) (Mechanische Verfahrenstechnik und Mechanik), course: Physikalische Chemie, Verfahrenstechnik, language: English, abstract: AOT-heptane-D2O as well as AOT-decane-D2O inverse microemulsions have been studied by using dynamic light scattering (DLS), microscopy, and rheology. These ternary systems are treated like dispersions of colloidal particles. Viscosity investigations for dilute and concentrated samples for both systems show an anomalous maximum with increasing droplet size. In contrast to speculations in earlier work, the maximum is attributed to the appearance of vesicles. They are readily observed in microscopy and lead to non-exponential relaxation in dynamic light scattering. A low to moderate concentration of the vesicles is suggested as an explanation for the observed Newtonian rheology. Furthermore a lower phase boundary corresponding to emulsification failure has been detected for AOT-heptane-D2O, useful as a starting point for systematic studies of droplet interactions, droplet shape fluctuations and percolation phenomena in AOT systems. The results are discussed in the context of earlier investigations of these inverse microemulsions. This item ships from multiple locations. Your book may arrive...

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