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Micelles and aggregates of oxyethylated isononylphenols and their extraction properties near cloud point

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Abstract

We used nuclear magnetic resonance (NMR) spectroscopy and dynamic light scattering (DLS) techniques to study the structural and dynamic properties of micellar solutions of nonionic surfactants of a homologous series of oxyethylated isononylphenols - $C_9H_{19}C_6H_4O(C_2H_4O)_nH$, where $n = 6, 8, 9, 10, \text{ or } 12$ - in a wide range of temperatures, including cloud points. The radii of the micelles and aggregates, as well as their compositions at different concentrations of surfactant, were determined. Using aqueous phenol solutions as a model, we studied the process of cloud point extraction with oxyethylated isononylphenols. © 2014 American Chemical Society.

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