

Experimental report

07/09/2022

Proposal: 9-12-581

Council: 4/2019

Title: Investigation of Polyelectrolyte-Surfactant precipitates

Research area: Soft condensed matter

This proposal is a new proposal

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Samples: Sodium dodecyl sulphate
Sodium Tetradecyl Sulphate

Instrument	Requested days	Allocated days	From	To
D16	2	2	28/01/2020	30/01/2020

Abstract:

Mixtures of oppositely charged surfactant and polyelectrolyte show rich aggregation behaviour that varies over a large size range. Some of these systems allow to control the rheological properties of water-based systems. Generally the macroscopic phase behaviour of these mixtures can be described by two monophasic regions in which clear, stable solutions are formed and a region in between where precipitation is observed. The precipitates usually form around charge equilibrium, while both an excess of surfactant or PE charges leads to the formation of stable solutions. Here, we want to investigate the bifasic region to understand the microstructural organization of precipitates.

The data of the experiment has been published in:

G. R. Del Sorbo, V. Cristiglio, D. Clemens, I. Hoffmann and E. Schneck: Influence of the Surfactant Tail Length on the Viscosity of Oppositely Charged Polyelectrolyte/Surfactant Complexes *Macromolecules*, **2021**, 54, 2529-2540, DOI:[10.1021/acs.macromol.0c02728](https://doi.org/10.1021/acs.macromol.0c02728)