

265f Vesicles and Micelles in Mixtures of Surfactant and Amino Acid Hydrotropes

Eric W. Kaler and Yamaira I. González

Small unilamellar vesicles (100 nm in diameter) form spontaneously in aqueous mixtures of the amino acids histidine or lysine and sodium dodecyl benzenesulfonate. By manipulating pH, a gradual transition from micelles to vesicles to bilayers to precipitate is observed. The self-assembly of vesicles occurs over a wide range of compositions and is likely the result of attractive interactions between the negatively charged benzenesulfonate headgroups and the positively charged amido groups in the amino acids. Similar results are obtained when imidazole salt itself is used. A photoacid generator can be used to induce the transition with UV light.