

A Disjoining Pressure Study of Foam Films Stabilized by Mixtures of Non-Ionic and Ionic Surfactants

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Supporting Information Available

In this study the cmc values for β -C₁₂G₂:C₁₂TAB mixtures were experimentally obtained by measuring the respective σ - c curves. If α is the mole fraction of C₁₂TAB in the solution, then the cmc of the mixture is predicted [1] to be

$$\text{cmc}_{\text{mix}} = \frac{1}{\frac{\alpha}{\text{cmc}(\text{C}_{12}\text{TAB})} + \frac{(1-\alpha)}{\text{cmc}(\text{C}_{12}\text{G}_2)}} \quad (\text{A1})$$

Eq.A1 is based on a very simple model, which assumes ideal mixing. Deviations from eq.A1 are only expected if there is a large interaction parameter associate with the system [1], which is not the case for cationic / non-ionic surfactant mixtures in general and for C₁₂TAB (or C₁₂TACl) / β -C₁₂G₂ in particular [2,3]. The interaction parameter for the mixture of C₁₂TAB and β -C₁₂G₂ was found to decrease from -1.54 to -0.43 with increasing amount of β -C₁₂G₂ indicating weak surfactant interaction and almost ideal behaviour especially at high β -C₁₂G₂ content [3]. In Fig.A1 the experimental cmc values of the surfactant mixtures as well as those calculated with eq.A1 are shown. As is seen, the β -C₁₂G₂ + C₁₂TAB mixture can be treated as an ideal mixture which is in agreement with the results obtained by other authors (see Fig.5 in [3]).

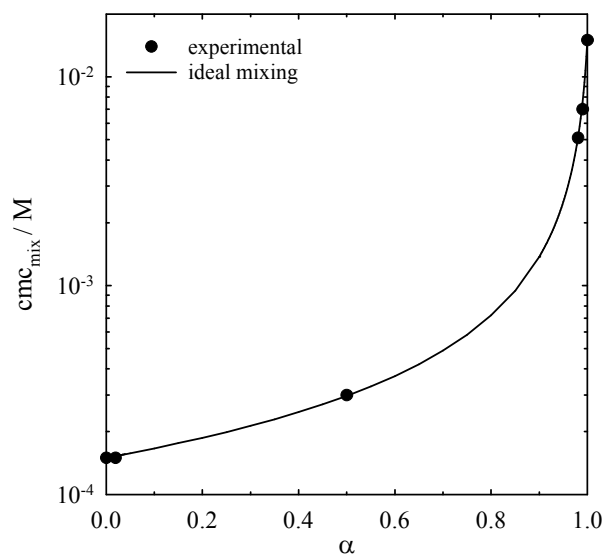


Fig.A1: Comparison of experimental cmc values for the $\beta\text{-C}_{12}\text{G}_2 + \text{C}_{12}\text{TAB}$ mixtures with those calculated by assuming ideal mixing of the components.

This information is available free of charge via the Internet at <http://pubs.acs.org>.

References

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