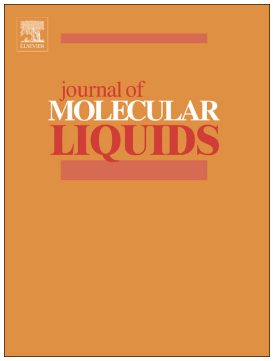

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PII: S0167-7322(17)32633-8
DOI: doi: 10.1016/j.molliq.2017.08.074
Reference: MOLLIQ 7782

To appear in: *Journal of Molecular Liquids*

Received date: 17 June 2017
Revised date: 24 July 2017
Accepted date: 19 August 2017

Please cite this article as: Y. Zhang, X.Y. Zhang, J.L. Chai, X.C. Cui, J. Pan, J.W. Song, B. Sun, J.J. Lu , The phase behavior and solubilization of isopropyl myristate in microemulsions containing cetyltrimethyl ammonium bromide and sodium dodecyl sulfate, *Journal of Molecular Liquids* (2017), doi: 10.1016/j.molliq.2017.08.074

The phase behavior and solubilization of isopropyl myristate in microemulsions containing cetyltrimethyl ammonium bromide and sodium dodecyl sulfate

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ABSTRACT

The phase behavior and solubilization of isopropyl myristate in microemulsions containing CTAB-SDS/IPM/butan-1-ol/aqueous NaCl (w = 0.05) with different X_{SDS} values **(the molar fraction of SDS in CTAB and SDS mixture)** were studied using the $\varepsilon-\beta$ diagram method. The microemulsion systems containing mixed CTAB-SDS surfactants have lower alcohol solubility (S_A) and lower mass fraction of the alcohol in the interfacial layer (A^S), but higher solubilization ability (SP^*) compared to the microemulsions containing single surfactant SDS and CTAB. At different oil-to-water ratios (α), CTAB and SDS in microemulsions display significant synergistic effect, and the order of magnitude for SP^* values is CTAB-SDS > CTAB ~ SDS. As the value of α increases, the order of magnitude for S_A and A^S values for different microemulsions can be ranked as: CTAB-SDS < CTAB < SDS. However, the SP^* value of the SDS-based microemulsions would decrease, the SP^* value of the CTAB-based microemulsions would increase, and the SP^* value of the CTAB-SDS-based microemulsions would increase at first, and remain constant

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