

عنوان مقاله:

Experimental investigation of low-chain alcohols effect on the critical micelle concentration of DTAC

محل انتشار:

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خلاصه مقاله:

The Critical Micelle Concentration (CMC), is considered as the single most useful quantity for characterizing surfactants. The current study attempts to evaluate the effects of low chain alcohols on CMC of a cationic surfactant called Dodecyl-Trimethyl-Ammonium chloride (DTAC) through measuring interfacial tension (IFT). Ethanol and 1-Propanol were used as low chain alcohols. Solutions with different fractions of alcohols were utilized to check the effects of alcohols on CMC. The results indicated that increase in alcohols fractions, would increase the CMC of DTAC solution. In addition, figures suggested that 1-propanol would increase CMC of DTAC almost linearly. Also, it was found that ethanol would increase CMC more than the value 1-propanol did. The specific content of 1-propanol (30%) increased CMC 13mM while this increase was 20mM for the same amount of ethanol. Based on measured data, two correlations were generated to predict the CMC in solutions with various alcohol contents. Due to smooth trend of CMC, these correlations can cautiously be used to predict CMC outside of measured range in addition to the inside range

کلمات کلیدی:

Critical Micelle Concentration (CMC), Dodecyl-Trimethyl-Ammonium chloride (DTAC), Enhanced Oil Recovery (EOR), (Interfacial Tension (IFT

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