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WITH ESTERS IN WATER AND
FORMAMIDE SYSTEMS

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By

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ABSTRAK

Kajian tentang gambarajah fasa telah dilakukan ke atas sistem air/surfaktan/ester dan formamide/surfaktan/ester untuk penyediaan mikroemulsi. Ester yang digunakan adalah metil asetat dan n-octil asetat, manakala surfaktan yang digunakan ialah TEA:ISA dengan nisbah 25:75. Keputusan menunjukkan bahawa terdapat kawasan isotropik bagi kedua-dua jenis sistem akues and bukan akues. Pada nisbah berat (30:70, 50:50 dan 60:40), formamide adalah lebih larut dalam metil asetat berbanding dengan n-octil asetat. Selain itu, air adalah lebih larut dalam n-octil asetat berbanding dengan metil asetat. Secara keseluruhan, kawasan keterlarutan bagi metil asetat adalah lebih besar daripada n-octil asetat dalam sistem akues and bukan akues. Peratus kehilangan berat dan kadar pemeruapan bagi nisbah berat TEA:ISA dan ester yang berlainan adalah lebih cepat dalam sistem akues berbanding dengan sistem bukan akues. Secara keseluruhan, didapati kehilangan berat dan kadar pemeruapan bergantung kepada kandungan air atau formamide, nisbah ester dan TEA:ISA. Dalam sistem bukan akues, nisbah methyl acetate dan TEA:ISA yang sama, kehilangan berat dan kadar pemeruapan adalah menurun dengan penambahan kandungan formamide. Keputusan ini adalah berlainan dalam sistem akues, dengan nisbah metil asetat dan TEA:ISA yang sama, kehilangan berat dan kadar pemeruapan yang tertinggi adalah meningkat dengan penambahan kandungan air.

ABSTRACT

The phase diagram behavior of water/surfactant/ester and formamide/surfactant/ester is investigated to prepared microemulsion. The esters used are methyl acetate and n-octyl acetate; the surfactants used are TEA:ISA at weight ratio of 25:75. The result shows isotropic region observed in aqueous and non-aqueous system. At the variable weight ratio of methyl acetate:surfactant, formamide are more soluble in methyl acetate compared to n-octyl acetate. However, water is more soluble in n-octyl acetate compared to methyl acetate. Overall, the solubility region in methyl acetate systems is larger than the n-octyl acetate counterpart. The percent weight loss of evaporation from the microemulsion system is found to be higher in the aqueous systems at different weight ratio of TEA :ISA and ester. The percent weight loss and evaporation rate are found to be dependent on the weight ratio of ester and TEA:ISA, and water/formamide content. For the non-aqueous system, the evaporation rate or the weight loss decreased with the increased of the formamide content. In the aqueous system, the evaporation rate or weight loss increased with the water content.