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Studies of the adsorption of polyglycerol polyricinileates at the paraffin oil/aqueous acetic acid solution interface and the effect of PGPR on the phase behavior of the system

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Abstract

The interfacial tension of the solutions of PG-6-PR, PG-10-PR, Tween 80 and PG-6-PR/Tween 80 mixtures at the paraffin oil/ aqueous acetic acid solution interface was measured. The interfacial parameters of the surfactant mixtures and individual surfactants were determined. It was shown that the surface activity of the mixture of two surfactants increases and CMC value decreases with increasing mass fraction of Tween 80. The pseudo-ternary phase diagrams aqueous acetic acid solution/PGPR/paraffin oil were constructed at the room temperature and 60 ^{o}C. The results indicated that PG-6-PR would be a better surfactant than PG-10-PR for formulating emulsions aqueous acetic acid solution/paraffin oil.