

FLOTATION EXTRACTION OF SURFACTANTS OF DIFFERENT NATURE FROM MIXED SOLUTIONS CONTAINING HIGH-MOLECULAR REAGENTS

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Abstract – Flotation extraction studies of anionic (sodium dodecyl sulphate) and non-ionic (Tweens) surfactants from their mixed aqueous solutions in the presence of high-molecular reagents (polyvinyl alcohol and polyacrylamide) revealed possibility, feasibility, and high efficiency of the procedure applied. It was found that in the presence of polyvinyl alcohol, Tweens could be extracted from aqueous solutions throughout the whole range of pH values, while sodium dodecyl sulphate could be extracted only in highly acidic and highly alkaline media. Optimal extraction of Tweens could be carried out for all the investigated ratios of the components of the mixture, whereas for sodium dodecyl sulphate the following ratios could be recommended - Tween: sodium dodecyl sulphate: polyvinyl alcohol = 0.5: 0.5: 1; 0.2: 0.8: 1. The optimum amount of polyacrylamide required for maximum flotoflocculation of Tweens and sodium dodecyl sulphate from mixed solutions accounted for 8 mg per 1 mg of surfactant. A possibility for selective increase in the rate of flotation extraction of sodium dodecyl sulphate and Tweens was demonstrated, which depended on both the nature of the added reagents and surfactant nature.

Keywords: surfactants, flotation, Tweens, sodium dodecyl sulphate, high-molecular reagents.