

Indicator System for Express Solid-Phase Spectrophotometry and Visual-Test Determination of Cationic Surfactants in Water Solutions

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The influence of some inorganic sodium salts on the reaction complexation of the molybdenum (VI) with bromopyrogallol red in the presence of the cationic surfactants in aqueous solutions has been studied spectrophotometrically. It is shown that the degree of influence of some sodium salts on the absorptions of the complex rises in the sequence: $\text{NaI} \leq \text{NaNO}_3 < \text{NaCl} < \text{Na}_2\text{SO}_4$ (for ionic strength = const). Developed is the composition of the chromogenic mixture of reagents for express solid - phase determination of cationic surfactants based on sorption of the colored complex by polyurethane foam. The use of such a mixture of reagents allows to increase the sensitivity of solid - phase spectrophotometry and visual test determination of cationic surfactants in quantities up to 0.1 mg/dm^3 of CTAB in water solutions with relative standard deviations $S_r \leq 0.23$ and 0.32 ($P = 0.95$), respectively.

Keywords: solid-phase spectrophotometry, visual-test determination, cationic surfactants, molybdenum (VI), bromopyrogallol red
