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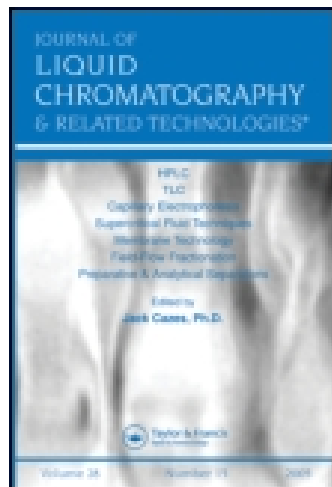
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SEPARATION OF FOUR CATIONIC SURFACTANTS ON SILICA GEL 60 F₂₅₄ HIGH PERFORMANCE THIN-LAYER CHROMATOGRAPHIC PLATES

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SEPARATION OF FOUR CATIONIC SURFACTANTS ON SILICA GEL 60 F₂₅₄ HIGH PERFORMANCE THIN-LAYER CHROMATOGRAPHIC PLATES

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□ *The chromatography of four cationic surfactants was performed on silica high performance thin-layer plates with mixed solvent system of methanol and ethylenediaminetetraacetic acid (EDTA). The resolution of a mixture of Benzyltrimethylammonium chloride (BTAC), Dodecyltrimethylammonium chloride (DTAC), Tetrabutylammonium bromide (TBAB), and Methyltrioctylammonium bromide (MTOB) was achieved by using methanol:5% aqueous EDTA (7:3,v/v) as a solvent system. The effect of concentration of EDTA on the mobility of all the four cationic surfactants was examined. The limit of detection of BTAC, DTAC, TBAB, and MTOB estimated was 0.65, 0.15, 0.15, and 0.31 µg/zone, respectively. The developed method was utilized to identify these surfactants in different spiked water samples after their preliminary separation.*

Keywords cationic surfactants, EDTA, methanol, separation, silica gel, thin-layer chromatography

INTRODUCTION

Cationic surfactants are widely used in many areas such as anticorrosive agents, flotation collectors, dispersants, antistatic agents, hair conditioners, fabric softeners, anticaking agents, and bactericides. The strong sorption tendency of cationic surfactants implies that these substances are expected to be present in various environmental samples. On the other hand, the

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