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A MICELLAR DECONTAMINATION STRATEGY FOR REMOVAL OF POLYCYCLIC AROMATIC HYDROCARBONS FROM ENVIRONMENT

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Abstract

Environmental decontamination requires strategies for removing organic contaminants from the ecosystem. Polycyclic aromatic hydrocarbons (PAHs) with toxic and carcinogenic properties are potentially hazardous pollutants. One suitable method for PAHs removal is their solubilization by micelles. This paper evaluates the effect of borax upon the aggregation ability of sodium dodecyl sulfate (SDS) with consequence over the micellar solubilization of naphthalene. Various techniques, such as micellar electrophoretic chromatography (MEKC), surface tension, UV-Vis and steady-state fluorescence were used to assess the micelle formation. The results show that borax decreases the critical micelle concentration of SDS and enhances the naphthalene solubilization. The work recommends borax as an efficient booster in the micellar decontamination strategy of PAHs.

Key words: aggregation, borax, naphthalene, sodium dodecyl sulfate, solubilization power

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