Separation of textile dye (Thioflavin T) by using supported liquid membranes

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Abstract: A laboratory study on supported liquid membrane (SLM) system has been carried out to investigate removal and recovery of a textile dye from the aqueous solution using non-toxic and natural vegetable oils as membrane liquids. A flat-sheet Durapore membrane, made from a microporous polyvinylidene fluoride (PVDF) film and impregnated with vegetable oils, has been tested for transport of Thioflavin T, a cationic dye. The fundamental parameters influencing this transport, such as pH in the feed solution, HCl concentration in the strip solution, different types of oils, stirring speed and initial dye concentrations, have been investigated. Maximum flux (1.68 × 10 -5 mg cm-2 sec-1) for the dye was obtained with sunflower oil as membrane liquid, with pH 12 of feed solution and 0.3M HCl in stripping. A maximum amount of dye was transported to the strip side withinin 7 hours under optimized conditions. © by PSP.