

Separation of organic species from wastewater using a polyol supported liquid membrane

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Abstract: This paper examines the application of supported liquid membrane for the removal of organic compounds in the aqueous waste effluents. Polypropylene glycol was employed as carrier mounted on PTFE supports. It has been demonstrated that polyols act as efficient carrier for selective removal of organic compounds having an acidic -OH group. Mass transfer coefficient increased when the number of carbon atoms increased from 4 to 6. A correlation between pKa, pH and flux of permeating species has been demonstrated. Aromatic compounds showed higher transport rates as compared to similar aliphatic compounds. Effect of temperature on the transport rates has been studied. It has been shown that a mock waste solution can be transported up to >90% under the conditions studied.