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Recovery of Fumaric acid from Aqueous Solution Using Laboratory Prepared Nontoxic Diluent

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Abstract : The present work was done to check the ability of three laboratory-modified nontoxic diluents (made from sunflower, rice bran, & Sesame oil) for the extraction of fumaric acid (dicarboxylic acid) with Tri-n-octyl amine as an extractant. Physical extraction studies with fumaric acid showed that the three modified diluents are incapable of extracting fumaric acid. The most effective Tri-n-Octylamine (TOA) extractant was dissolved in the three modified diluents (made from sunflower, rice bran, Sesame oil). Extraction efficiency increased with the increase in the percentage (V/V) of Tri-n-Octylamine (TOA) indicating a prominent role of the extractant. The extraction efficiency of 30% Tri-n-Octylamine (TOA) in all the 3 modified oils (diluent) is nearly 90%. The effect of higher percentages of Tri-n-Octylamine (TOA) extractant on extraction efficiency was also studied but the marginal increase in the extraction efficiency was found for all the three laboratory-modified oils.

Keywords : Fumaric acid, dicarboxylic acid, Tri-n-octyl amine (TOA), laboratory-modified nontoxic diluent, Reactive extraction.

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