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Investigation of acrylic acid extractability from aqueous solution using tridodecyl amine extractant

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ABSTRACT

2-Propenoic acid (acrylic acid) extraction from aqueous solution using tridodecylamine (TDA) extractant dissolved in five single solvents (isoamyl alcohol, heptanol, hexanol, octanol, decanol) at 298K was studied. Some parameters related extraction, the extent to which the organic phase may be loaded with acrylic acid is expressed as loading ratio, *Z*, its values extraction efficiencies *E* and distribution coefficients, $K_{D,}$ were calculated in light of the experimental data. According to Bizek Approach, equilibrium complexation constants for (acid:amine) (1:1), (1:2) have been determined. The maximum removal of acrylic acid accomplished was about 91% with isoamyl alcohol having 1.188 mol.dm^{-3} initial concentration of TDA. Linear Solvation Energy Relationship (LSER) model was applied experimental data. LSER model results were compared with the experimental results and well agreement between them was observed.

Keywords: Reactive extraction; Acrylic acid; Tridodecylamine