

Effect of Sodium Chloride in the Recovery of Acetic Acid from Aqueous Solutions

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Abstract : Acetic acid is one of the simplest and most widely used carboxylic acids having many important chemical and industrial applications. Total worldwide production of acetic acid is about 6.5 million tonnes per year. A great deal of efforts has been made in developing feasible and economic method for recovery of carboxylic acids. Among them, Liquid-liquid extraction using aqueous two-phase systems (ATPS) has been demonstrated to be a highly efficient separation technique. The study of efficiently separating and recovering Acetic acid from aqueous solutions is an important significance on industry and environmentally sustainable development. Many research groups in different countries are working in this field and some methods are proposed in the literature. In this work, effect of sodium chloride with different content (5%, 10% and 20%) on the liquid-liquid equilibrium data of (water+ acetic acid+ DCM) system is investigated. The addition of the salt in an aqueous solution introduces ionic forces which affect liquid-liquid equilibrium and which influence directly the distribution coefficient of the solute. From the experimental results, it can be concluded that when the percentage of salt increases in the aqueous solution, the equilibrium between phases is modified in favor of the extracted phase.

Keywords : acetic acid recovery, aqueous solution, salting-effect, sodium chloride

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