

Removal of by-products from model sodium succinate solutions by nanofiltration

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All succinic-acid-producing bacteria form mixed-acid fermentations, producing varying amounts of succinate as well as other products, including lactate, acetate, formate. Nanofiltration was introduced for the recovery of sodium succinate and the removal of other products from model solutions. Five nanofiltration membranes were tested by observing the rejection of single salt solutions and NF45 and ESNA1-4040 were selected for this study. The effects of flux were investigated with the concentration ratio of by-products and sodium succinate about the selected membranes. The separation efficiency was improved as the concentration ratio of by-products and sodium succinate increased and was strongly dependent to flux. Batch operation was carried out for more efficient separation by using dia-filtration mode. As the operating time increased, the separation efficiency increased due to the increase in the concentration ratio of by-products and sodium succinate.