

Cost-effective disposal of milk whey II: recovery and purification of lactose and pure water from the diafiltration permeate stream

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ABSTRACT

The fractionation of the permeate stream resulting from a typical protein recovery section of a microfiltered cheese whey has been studied and a new membrane based process has been proposed to obtain: a) a concentrated solution of lactose; b) a concentrated solution of high bio available minerals; c) a net stream of pure water. To find the optimal connection between different sections of the process and optimal operating parameters for each section, the physico-chemical and thermodynamic properties of the solutions were studied and simulated in wide ranges of temperature and concentration.

Keywords: Whey; Solubility of lactose; Milk minerals solutions; Water recovery; Membrane filtration; Water activity

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