

Abstract

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Nanofiltration

Diploma thesis

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Nanofiltration is a pressure-driven membrane process which is characterized by using semipermeable membranes with approximately 1 nm pores. This method is used abundantly for the separation of substances with low molecular weight. It is used for example in the process of product isolation in pharmaceutical industry. This diploma thesis is focused on the description of the behaviour of three commercially produced nanofiltration membranes and also on testing of their potential use in the production of ergot alkaloids. The theoretical part is focused especially on the description of pressure-driven membrane processes, the use of nanofiltration in various areas and also on current and historical use of ergot alkaloids in therapy and on the description of their properties. The practical part is oriented particularly on examination of effect of various experimental parameters on the retention of selected ergot alkaloids (primarily of lysergic and isolysergic acid). The results are compared and critically analysed.

Keywords: pressure-driven membrane processes, nanofiltration, ergot alkaloids