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Metal recovery from tannery effluent using nanofiltration process

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ABSTRACT

Most tannery industries use the chrome tanning process because of its easy use and excellent resulting leather properties. Nanofiltration is especially employed for softening industrial wastewater and for recovery of metal ions. The aim of this paper was to utilize nanofiltration NF90 technology as an environmentally sound and easy to use production system that minimizes pollutants in the wastewater of tanneries. Various effluent quality parameters were evaluated. Nanofiltration process was used for the removal of metals from the tannery effluent solution. Following the study of their transport through the membrane. NF90 membranes were able to retain ≥67% of the total mass of all metals present in the tannery effluent at pH = 1.2. The total mass of Ca retained exceeded 95.27% and Mg retained was 94.18%.

Keywords: Nanofiltration; Membrane; Recovery; Tannery effluent; Chromium

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