

Water desalination by cellulose acetate membrane

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Abstract Asymmetric membranes were fabricated from a ternary system consisting of cellulose acetate, acetone and formamide or water using a phase inversion process. These membranes were asymmetric-hydrophilic type with thickness less than 400 μm . The membranes performances in water desalination, based on percentage of rejection of sodium chloride (NaCl) and fluxes with different concentrations of sodium chloride are reported. Based on the experimental results, the pure water fluxes of the two membranes, i.e. MAC-1F and MAC-2W samples, were about 4.5×10^{-4} m/s and 5.3×10^{-4} m/s respectively. The pure water fluxes were increased at cellulose acetate membranes prepared with water as non-solvent (MAC-2W sample). Also, for the NaCl solution, the flux rate (J) and percentage of rejection (R%) were increased at this membranes.

Keywords: cellulose acetate membrane, filtration, water desalination
