Wisniewski, J.A., Kliber, S. Removal of Bromates from Aqueous Solutions by Anion Exchange in a Membrane Process. *Ochrona Srodowiska* 2009, Vol. 31, No. 2, pp. 35–39.

Abstract: The objective of the study was the removal of bromates from water solutions by an anion-exchange membrane process. Donnan dialysis was conducted in a laboratory dialytic set-up (Goemasep 136) equipped with 20 cell pairs and three types of anion-exchange membranes: Selemion AMV, Neosepta AFN or Neosepta ACS. The highest efficiencies of bromate removal, 89% and 100%, were obtained with Selemion AMV, at NaCl concentrations in the receiving solution amounting to 200 mol/m^3 and 300 mol/m^3, respectively. It has been observed that when use was made of the Neosepta AFN membrane (characterized by a loose structure), anion exchange proceeded at a faster rate as compared to the other membranes tested, but the efficiency of bromate removal was lower. The application of the Neosepta ACS membrane (of a dense surface structure) produced the lowest values of both rate and efficiency of anion removal (including those for bromates). It has been demonstrated that the process of anion exchange conducted with anion-exchange membranes not only brought about a highly efficient removal of the harmful bromates and nitrates from the water, but also enabled their substitution with neutral ions (chlorides). The rate and efficiency with which the anions were removed during the process depended, *inter alia*, on the type of the anion-exchange membrane and the concentration of NaCl in the receiver.

Keywords: Anion exchange, anion-exchange membrane, bromates, nitrates, bicarbonates.