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Application of weakly and strongly basic anion exchangers for the removal of brilliant yellow from aqueous solutions

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ABSTRACT

The weakly and strongly basic anion-exchangers (Amberlite IRA-67, Amberlite IRA-958, Amberlite IRA-402) of acrylic or styrene–divinylbenzene matrices have been applied for Brilliant Yellow (BY) removal from the aqueous solutions. The total ion exchange capacities (9.1×10^{-4} mol/g, 6.12×10^{-4} mol/g and 4.38×10^{-5} mol/g for Amberlite IRA-958, Amberlite IRA-67, Amberlite IRA-402, respectively) as well as recovery factors of Brilliant Yellow were determined by the batch method. The influence of phase contact time, pH and temperature was studied. The anion-exchangers modified by means of Brilliant Yellow were also applied in order to remove Cu(II), Ni(II) or Co(II) ions from chloride solutions. As follows from the results, the anion exchangers of acrylicdivinylbenzene matrix can be widely recommended for BY removal from waters and wastewaters originating from textile industry because of their high selectivity.

Keywords: Brilliant yellow; Azo dyes; Anion exchangers; Sorption; Removal; Wastewaters

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