

Synthesis and some sorption properties of anion exchangers bearing ligands of different length with guanidyl and biguanidyl end groups.

Autorzy

B. N. Kolarz

Andrzej W. Trochimczuk

D. Jermakowicz-Bartkowiak

Julia Jezierska

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Streszczenie

In this work the influence of ligands length with guanidyl and biguanidyl end groups on the performance of anion exchangers is presented. These anion exchangers are synthesized in a two-step reaction. Firstly, the aminolysis of chlorine in a copolymer of vinylbenzyl chloride (VBC) and 2 wt% of divinylbenzene (DVB) with hexamethylenediamine (HMDA) or diethylenetriamine (DETA) is conducted. Thus obtained amine derivatives are subsequently reacted with cyanamide, carbodiimide or sodium dicyanamide. It is found that the most convenient method of biguanidine group introduction into polymer matrix is the reaction of amino groups with sodium dicyanamide. Properties of resins are studied using Cu(II) ions as a spin probe detected by EPR method. A higher complexing ability towards Cu(II) showed by anion exchangers with DETA ligands (DETA resins) is due to chelating function of their ligands. The anion exchanger with HMDA ligands (HMDA resins) requires higher pH (about 7) to provide sufficient number of deprotonated nitrogen donors of monodentate ligands for sorption of Cu(II). The ligands length and their hydrophilicity do not change significantly sorption properties of resins towards dicyanoaurate and tetrachloroaurate.

Adres publiczny

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