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Studies of the Synthetic Inorganic Ion Exchanger. V. The Separation of Zirconium-95 and Niobium-95 by Means of a Stannic Phosphate Cation Exchanger*

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Abstract

With the aim of developing a method for the separation of ^{95}Zr and ^{95}Nb, various eluants were investigated, a sulfuric acid solution was found to be most suitable for this purpose. After the stannic phosphate exchanger column had been conditioned with 1N nitric acid, the sample solution was passed through it to adsorb ^{95}Zr and ^{95}Nb. By using a 2N sulfuric acid solution and a 3N sulfuric acid –0.01N hydrofluoric acid solution as eluants, ^{95}Zr and ^{95}Nb could be eluted respectively. The separation was not quantitative, however, because of the unfavorable tailing of the elution curves. On the basis of the above results, the possibility of the total radiochemical separation of a long-lived fission product and the mechanism of the adsorption of these ions were discussed.

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