

Russian Journal of General Chemistry 2011 vol.81 N7, pages 1464-1469

Membrane transport of metal ions with lipophilic aminomethylphosphine oxides

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Abstract

The processes of membrane transport of ions of scandium(III), samarium(III), gadolinium(III), neodymium(III), aluminum(III), and a number of alkali and alkaline earth metals through liquid membrane impregnated with aminophosphoryl carriers of different structures were studied. Selectivity of bis (dialkylphosphinyl)amines towards scandium was found to be significantly higher than the selectivity of diphosphinylpiperazine and monophosphinylamine in particular. The dependence of transfer efficiency on the concentration of substrates and carriers was revealed. Optimal conditions for transporting rare and trace metal ions through the membrane were found, and the mechanism of transmembrane transport was discussed. © Pleiades Publishing, Ltd., 2011.

<http://dx.doi.org/10.1134/S1070363211070103>
