

## **Extraction of lanthanum and gadolinium(III) at the cloud point using p-sulfonatocalyx[n]arenes as chelating agents**

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### **Abstract**

The extraction of gadolinium(III) and lanthanum(III) ions at the cloud point is studied in Triton X100 micellar solutions in a wide range of pH. In the absence of chelating agents, lanthanum(III) and gadolinium(III) ions are unselectively extracted at pH > 6. It is shown that the use of p-sulfonatothiacalix[6(8)]arenes as chelating agents noticeably enhances the degree of extraction at pH 2-6. The composition and stability of lanthanum-p-sulfonatothiacalix[n]arene complexes (n = 4, 6, 8) are estimated in a wide range of pH by pH-potentiometry. The degree of Gd<sup>3+</sup> and La<sup>3+</sup> ions extraction, which is performed at the cloud points employing calyxarene macrocycles of different sizes, is depended on the acidity of a medium. © 2009 Pleiades Publishing, Ltd.

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