

研究论文

在L-缬氨酸介质中应用聚二苯并-18-冠醚-6-分离铈(III)

SABALE Sandip R, MOHITE Baburao S*

Analytical and Environmental Research Lab, Department of Chemistry, Shivaji University, Kolhapur 416004, M. S., India

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摘要 A column chromatographic method has been developed for the separation and determination of cerium(III) using poly [dibenzo-18-crown-6]. The separation was carried out in L-valine medium. The adsorption of cerium(III) was quantitative from 1×10^{-1} to 1×10^{-4} mol/L L-valine. Amongst the various eluents, 1.0-8.0 mol/L hydrochloric acid, 1.0-8.0 mol/L hydrobromic acid, 1.0-8.0 mol/L perchloric acid, 1.0-2.0 mol/L sulfuric acid and 4.0-5.0 mol/L acetic acid, were found to be the efficient eluents for cerium(III). The capacity of poly [dibenzo-18-crown-6] for cerium(III) was (0.428 ± 0.01) mmol/g. The method was applied to the separation of cerium(III) from associated elements link uranium(VI) and thorium(IV). It was also applied for the determination of cerium(III) in geological samples. The method is simple, rapid and selective with good reproducibility (approximately $\pm 2\%$).

关键词 [column chromatography](#) [poly \[dibenzo-18-crown-6\]](#) [cerium\(III\)](#) [uranium\(VI\)](#) [thorium\(IV\)](#) [L-valine](#)

Chromatographic separation of cerium(III) in L-valine medium using poly [dibenzo-18-crown-6]

SABALE Sandip R, MOHITE Baburao S*

Analytical and Environmental Research Lab, Department of Chemistry, Shivaji University, Kolhapur 416004, M. S., India

Abstract

A column chromatographic method has been developed for the separation and determination of cerium(III) using poly [dibenzo-18-crown-6]. The separation was carried out in L-valine medium. The adsorption of cerium(III) was quantitative from 1×10^{-1} to 1×10^{-4} mol/L L-valine. Amongst the various eluents, 1.0-8.0 mol/L hydrochloric acid, 1.0-8.0 mol/L hydrobromic acid, 1.0-8.0 mol/L perchloric acid, 1.0-2.0 mol/L sulfuric acid and 4.0-5.0 mol/L acetic acid, were found to be the efficient eluents for cerium(III). The capacity of poly [dibenzo-18-crown-6] for cerium(III) was (0.428 ± 0.01) mmol/g. The method was applied to the separation of cerium(III) from associated elements link uranium (VI) and thorium(IV). It was also applied for the determination of cerium(III) in geological samples. The method is simple, rapid and selective with good reproducibility (approximately $\pm 2\%$).

Key words [column chromatography](#) [poly \[dibenzo-18-crown-6\]](#) [cerium\(III\)](#) [uranium\(VI\)](#) [thorium\(IV\)](#) [L-valine](#)

DOI:

通讯作者 MOHITE Baburao S bsmohite@hotmail.com, Sandip_ana@rediffmail.com.

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