

研究报告

铀产品中镎和钚的分离与测定方法

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摘要 为了提高分离效果, 避免测量过程中铀基体的干扰, 满足核燃料后处理质量控制分析的要求, 建立了氩气加压排空阴离子交换系统用于铀产品中Np和Pu的同时分离与测定的方法。模拟样品分离与测定结果表明: 采用该系统可快速有效实现铀产品中Np和Pu的分离, Np和Pu对铀的去污系数平均值分别为 8.6×10^4 , 9.6×10^4 , 避免了测量过程中铀基体的干扰, Np和Pu的平均回收率分别为78% ($n=6$) 和86% ($n=6$)。

关键词 [铀产品](#); [钚](#); [镎](#); [分离](#)

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Separation and Determination of Neptunium and Plutonium in the Uranium Product

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Abstract

Simultaneous separation and determination of plutonium and neptunium from the simulated uranium product specimen were developed for the requirement of uranium product quality control in nuclear fuel reprocessing. An argon pressurized anion-exchange evacuated column system was established for separation of plutonium and neptunium from the simulated uranium product specimen. After separation, neptunium and plutonium were measured with a large area grid ionization chamber-alpha spectrometry. The results show that determination of Np, Pu in uranium product with above-mentioned separation and measurement method meet the requirement of uranium product quality control in nuclear fuel reprocessing. The average decontamination factors are 8.6×10^4 , 9.6×10^4 respectively for the uranium with respect to neptunium and plutonium. The average recoveries of neptunium and plutonium are 78% ($n=6$) and 86% ($n=6$) respectively.

Key words [uranium product](#) _ [Pu](#) _ [Np](#) _ [separation](#)

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