

粪及组织中钚的测定

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摘要 <正> 前言 钚是一种重要的核燃料,也是极毒元素之一。随着核工业的发展,对钚的卫生评价将日益深入。通过新陈代谢过程转移到机体组织中的钚一般是易溶解的,肺组织、粪便以及从伤口

关键词 [萃取色层](#) [钚](#) [粪](#) [组织](#)

分类号

DETERMINATION OF THE PLUTONIUM IN EXCREMENT AND TISSUE SAMPLES

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Abstract This paper is concerned with the determination of microamount plutonium in excrement and tissue samples. After the organisms are destroyed completely with $\text{HNO}_3\text{-H}_2\text{O}_2\text{-HClO}_4$, the PuO_2 can be dissolved with 0.48 mol/l HF-15 mol/l HNO_3 . The Pu can be converted into Pu (IV) with $\text{Fe}(\text{SO}_3\text{NH}_2)_2$ and NaNO_2 . Then chromatographic extraction column TOA-xylene-Kel-F is used to separate and purify Pu (IV). The column is washed with 4 mol/l HNO_3 , 10 mol/l HCl to remove U, Th, Am and other interfering nuclides. Finally, the Pu is stripped with 0.025 mol/l $\text{H}_2\text{C}_2\text{O}_4$ -0.15 mol/l HNO_3 -0.3 mol/l NH_4NO_3 and directly electrode-posit onto a plate. The sample plate is measured by a low-background α counting instrument. The method is simple and rapid. The recovery of Pu is 85--90%. The detection limit is 3.9×10^{-4} Bq, and the precision better than $\pm 15\%$.

Key words [Chromatographic extraction](#) [Plutonium](#) [Excrement](#) [Tissue samples](#)

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