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草酸体系中镎、钚的阴离子交换分离

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摘要 用阴离子交换法研究了TRPO流程中镎和钚的浓缩和分离。在适宜条件下,Np、Pu以草酸络阴离子被阴离子交换树脂吸附。用稀硝酸将镎、钚同时洗脱后,调节洗脱液为8mol/LHNO₃,使镎和钚转成硝酸络阴离子,再用一阴离子交换柱吸附镎和钚后,用氨基磺酸亚铁硝酸溶液还原解吸钚,最后用稀硝酸洗脱镎。在实验基础上,建立了镎、钚的离子交换分离流程。本流程的镎、钚浓缩倍数为840,它们的浓度达到约20g/L,镎和钚的分离系数 $\beta_{Pu/Np}>100$; $\beta_{Np/Pu}>300$;Np和Pu的回收率分别为97.6%和97.4%。

关键词 [草酸](#) [镎](#) [钚](#) [离子交换](#) [分离](#)

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Anion Exchange Separation of Np and Pu in Oxalic Acid System

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Abstract The concentration and separation of Np and Pu in TRPO process are studied by anion exchange method. Oxalic complex ions of Np and Pu in suitable H₂C₂O₄HNO₃ solution are absorbed by an anion exchange column, then they are eluted by 0.35 mol/L HNO₃. The eluted solution is adjusted to 8 mol/L HNO₃ and is absorbed as nitrate complex by another anion exchange column. Pu and Np on the column are eluted by 5.6 mol/L HNO₃ 0.05 mol/L Fe(NH₂SO₃)₂ and 0.35 mol/L HNO₃, respectively. The concentration and separation process of Np and Pu are given out. Np and Pu are concentrated 840 times in the process, separation coefficient is $\beta_{Pu/Np}>100$ and $\beta_{Np/Pu}>300$, recovery of Np and Pu is 97.6% and 97.4%, respectively.

Key words [oxalic acid](#) [Np](#) [Pu](#) [ion exchange](#) [separation](#)

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