

研究报告

## 乙异羟肟酸改善铀纯化循环Ru去污的研究

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**摘要** 研究了乙异羟肟酸(AHA)浓度、酸度、温度及时间等因素对Ru预处理效果的影响, 结果表明, 预处理酸度为0.2 mol/L时, 0.2 mol/L AHA为预处理试剂在80 °C保温预处理3 h, Ru在 $\phi=30\%$ TBP/煤油中的分配比( $D(\text{Ru})$ )约降至预处理前的1/3。在选定的上述预处理条件下进行模拟铀纯化循环2D槽串级实验, 结果表明, Ru的去污因子( $\text{DF}(\text{Ru})$ )为 $1.82 \times 10^3$ , 较不进行料液预处理时的 $\text{DF}(\text{Ru})$ 提高近6倍。

**关键词** [乙异羟肟酸\(AHA\)](#); [钌](#); [预处理](#); [去污因子](#)

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## Improvement of Ruthenium Decontamination in Uranium Purification Cycle With Acetohydroxamic Acid

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**Abstract** In order to improve the decontamination of ruthenium in nuclear fuel reprocessing, the pretreatment of the feed solution with acetohydroxamic acid (AHA) has been investigated in this paper. The influences of AHA concentration, pretreatment temperature and time on decontamination of ruthenium have been studied. Single stage extraction experiments were carried out with 0.2 mol/L  $\text{HNO}_3$  system by pretreatment of 3 h at 80 °C. In this way, 0.2 mol/L AHA can make the distribution coefficient of ruthenium( $D(\text{Ru})$ ) with 30% TBP/kerosene  $\text{HNO}_3$  system decrease by a factor of 3. And the cascade experiments for 2D tank in uranium purification cycle show that the value of  $\text{DF}(\text{Ru})$ (about  $1.82 \times 10^3$ ) has increased by 6 times compared with that of the experiments without the application of AHA.

**Key words** [acetohydroxamic acid\(AHA\)](#) \_ [ruthenium](#) \_ [pretreatment](#) \_ [decontamination factor](#)

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