

以低碳羟肟酸作络合剂改善钌的去污

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摘要 在低酸条件下加入水溶性的低碳羟肟酸保温预处理,可使30%TBP-煤油萃取RuNO硝酸根络合物的分配系数 D_{Ru} 降低一个数量级。料液预处理后调至2.0mol/l HNO₃介质,放置40h,其 D_{Ru} 值无明显变化。大量铀的存在对预处理效果无影响。

关键词 [钌](#) [水溶性](#) [低碳羟肟酸](#)

分类号

IMPROVING THE DECONTAMINATION OF RUTHENIUM WITH SHORT CHAIN HYDROXAMIC ACID AS COMPLEXING AGENT

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Abstract The ruthenium decontamination factor in Purex process falls quickly with recycles of TBP. So it is necessary to change the chemical states of RuNO complexes in order to improve DF_{Ru} in the uranium purification cycle. The retention of RuNO complexes in TBP-kerosene-laurohydroxamic acid is observed to be quite large in our previous work. Therefore, water-soluble short chain hydroxamic acid is used as complexing agent to decrease the distribution coefficient of Ru. Hydroxamic acid can transform RuNO complexes into inextractable species by TBP-kerosene in certain conditions. The result of cascade experiment indicates that the ruthenium decontamination can be increased by a factor of 40—50. Acidity has more influence on the effect of pretreatment. The higher acidity is, the worse the effect will be. The pretreatment is first carried out in low acidic solution, then extractive acidity is increased. In this way, the distribution of Ru can be decreased obviously. After pretreatment, the acidity of solution is increased to 2 mol/l HNO₃ and aged for 40 hours, then extracted by 30%(V/V)TBP-kerosene, the distribution of Ru has no much increase. It illustrates that the RuNO-hydroxamic acid is rather stable. Short chain hydroxamic acid can be destroyed easily in evaporative process.

Key words [Ruthenium](#)[Water-soluble](#)[Hydroxamic acid](#).

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