

研究报告

## 二环己基18冠醚-6/异丙氧基杯[4]冠-6-正辛醇共萃取Sr和Cs

叶维玲; 王建晨; 何千舸

清华大学 核能与新能源技术研究院, 北京 102201

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**摘要** 以正辛醇作稀释剂, 二环己基18冠醚-6(DCH18C-6)和异丙氧基杯[4]冠-6(IPR-C[4]C-6)作为萃取剂进行了从硝酸介质中共萃取分离Sr和Cs的研究。研究了萃取剂浓度、硝酸浓度、温度等因素对Sr, Cs的萃取性能影响。研究结果表明, 2种萃取剂相互之间没有明显的协萃作用, 分别独立进行对Sr和Cs的萃取。通过选择合适的萃取和反萃条件可以满足体系对Sr, Cs的萃取和反萃要求。

**关键词** [二环己基18冠醚-6](#) [异丙氧基杯\[4\]冠-6](#) [Sr](#) [Cs](#) [萃取](#)

**分类号** [TL241.14](#)

## Coextraction of Strontium and Cesium by Dicyclohexano-18Crown-6/25, 27-Bis(2-Propyloxy)Calix[4]-26, 28-Crown-6-*n*-Octanol

YE Wei-ling; WANG Jian-chen; HE Qi-an-ge

Institute of Nuclear and New Energy Technology, Tsinghua University, P. O. Box 1021, Beijing 102201, China

### Abstract

The partitioning of  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  from high-level liquid waste(HLLW) is one of the important problems for the high-level waste volume reduction and the management of HLLW. The crown ether and calixcrown have the good extracting

ability and selectivity to strontium and cesium respectively. Dicyclohexano-18crown-6 (DCH18C-6) and 25, 27-bis(2-propyloxy)calix[4]-26, 28-crown-6(IPR-C[4]C-6) were selected as extractants and *n*-octanol was selected as the common diluent to separate strontium and cesium from high-level liquid waste respectively in INET, Tsinghua University. But DCH18C-6 and IPR-C[4]C-6 were used respectively in their processes to separate strontium and cesium. The strontium and cesium processes could be simplified if DCH18C-6 and IPR-C[4]C-6 processes are combined in one process to separate strontium and cesium together. In this paper, the coextraction performance of strontium and

cesium from nitric acid medium was studied by DCH18C-6/IPR-C[4]C-6 and *n*-octanol as a diluent. Effects of extractant concentration, nitric concentration and temperature etc. on the extraction performance of strontium and

cesium were studied. The results show that DCH18C-6 and IPR-C[4]C-6 in *n*-octanol has no synergistic extraction ability to strontium and cesium. Strontium and cesium are extracted independently by above two extractants.

The extracting and stripping requirements of strontium and cesium can be satisfied by selecting better parameters.

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通讯作者 叶维玲