

硒功能化杯[4]芳烃对金属离子的识别及在PVC基质支撑液膜的传输作用

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摘要 提出以PVC为基质的支撑液膜传输体系,研究了以新研制的硒功能化杯[4]芳烃为活性载体,邻苯二甲酸二辛酯(DOP)为膜溶剂的PVC基质支撑液膜对金属离子的传输性能。采用双层夹心膜电位法测定了活动载体-金属离子在膜中的配合物生成常数,对离子在膜中的传输速率、选择性系数以及生成常数之间的相关性作了研究。使用该体系发现,在8种金属离子中汞具有最快的传输速率;进一步讨论了硒功能化杯[4]芳烃对金属离子的识别作用和支撑液膜传输机理。

关键词 [硒](#) [杯芳烃](#) [邻苯二甲酸二辛酯](#) [液膜技术](#) [选择性](#)

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A PVC Matrix Supported Liquid Membrane Transport and Molecular Recognition to Metal Ions by Selenium Functionalized Calix[4]arene

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Abstract A new PVC matrix supported liquid membrane transport system was proposed. By using a new selenium functionalized calix[4] arene as carrier, dioctyl phthalate as membrane solvent, the ion transport properties of the membrane were characterized. The formation constants of carrier-metal ion complex were measured by potentiometry with two-layer sandwich membrane method. The correlation among the transport rate, complex formation constant and selective coefficients was studied. The fastest transport rate of mercury among eight metal ions was obtained by the selenium function calyx[4]arene. The molecular recognition of the calix[4]arene to metal ions and the mechanism of supported liquid membrane were discussed.

Key words [SELENIUM](#) [calixarene](#) [DIOCTYLTEREPHTHALATE](#) [LIQUID MEMBRANE TECHNIQUES](#) [SELECTIVITY](#)

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