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季铵盐对钴(II)和锰(II)的萃取分离

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摘要: 研究了用季铵盐从含氯化钠接近饱和的溶液中萃取分离二价金属离子钴、铁、锰的方法。实验结果表明, 以含少量异辛醇改性剂的季铵氯化物的煤油溶液为萃取剂, 萃取时尽管有15%~20%的二价锰和钴一起被萃取, 但通过两级洗涤可将负荷有机相中的锰降低到0.02 g/L以下, 经三级洗涤除锰即可达到钴、锰分离。钴的回收率可达98%, 负荷有机相中钴锰含量比大于300。

关键字: 萃取分离; 钴(II); 锰(II); 季铵氯化物

Extractive separation of cobalt(II) and manganese(II) with quaternary ammonium chloride

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Abstract: The solvent extraction separation of cobalt(II) and manganese(II) from a waste solution containing saturation sodium chloride was investigated. The experimental results showed that quaternary ammonium chloride(QAC) with iso octanol as modifier and kerosene as diluent is suitable to separate cobalt(II) and manganese(II). Although 15%~20% divalent manganese(II) was co extracted with cobalt, manganese in loading organic phase could be reduced from 0.4 g/L to 0.02 g/L in one stage scrubbing with a saturated sodium chloride solution. A feed solution containing 0.6 g/L of Mn(II), 1.5 g/L of Co(II) extracted with a 0.3 mol/L of QAC and 5% of iso octanol in a four stage counter current extraction and a three stage scrubbing, and then stripped with pure water, a recovery of 98% cobalt and a ratio of Co/Mn>300 were achieved.

Key words: extractive separation; cobalt(II); manganese(II); quaternary ammonium chloride

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