

Volume 6

Extraction of Lithium from Brine Containing High Concentration of Magnesium by Tri-n-Butyl Phosphate Dissolved in Kerosene

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收稿日期 1997-6-4 修回日期 网络版发布日期 接受日期 1997-8-28

摘要 Tri-n-butyl phosphate (TBP) dissolved in kerosene was chosen as extractant for lithium from a model brine having high magnesium-to-lithium ratio and ferric chloride was added to the system. The influences of contact time, concentration of the extractant, concentrations of some salts (Mg^{2+} , Na^+ , K^+) in the solution, acidity of hydrochloric acid and extraction temperature on the extraction of lithium with TBP-kerosene system were studied. The suitable extraction conditions were found to be: contact time not any less than 20 min; at 20—25°C; $[Fe^{3+}] / [Li^+]$ about 1.5—2.0; TBP concentration 50%—70%; $[MgCl_2]$ exceeding 3 mol·L⁻¹; pH about 2; while most sodium and potassium salts in the aqueous phase should be removed before the extraction.

关键词 [lithium](#) [solvent extraction](#) [tri-n-butyl phosphate](#) [ferric chloride](#)

分类号

DOI:

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Received 1997-6-4 Revised Online Accepted 1997-8-28

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Key words [lithium](#); [solvent extraction](#); [tri-n-butyl phosphate](#); [ferric chloride](#)

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