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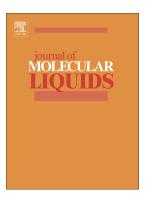
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## CCEPTED MANUSCRIPT

Evaluation of the Emulsion Liquid Membrane Performance on the removal of

**Gadolinium from Acidic Solutions** 

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**Abstract** 

This work evaluates the performance of emulsion liquid membrane (ELM) for the extraction

of Gadolinium (III) from acidic solution. The ELM was made up of di-(2-ethylhexyl)

phosphoric acid (D2EHPA) as carrier, Span 80 (sorbitol monooleate) as emulsifying agent,

commercial Kerosene as organic diluent and Nitric acid as stripping phase. Important

physical and chemical variables affecting the ELM performance for the extraction of

Gadolinium (III) such as carrier concentration, mixing time, surfactant concentration,

agitation speed, initial pH of the feed phase, internal phase concentration, treatment ratio, and

feed phase concentration were systematically investigated. Results indicated that the highest

Gadolinium(III) extraction can be attained after 10 minutes of mixing by using 0.05M

D2EHPA, 1.5% (v/v) Span 80, 1.0M nitric acid as stripping phase at feed phase pH of 2,

agitation speed of 180 rpm, and treatment ratio of 1:10. At the optimum condition,

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