**Selective transport of cadmium from acidic leach solutions by emulsion liquid membrane using TIOA as the carrier**

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|  **Abstract**In the present study, the selective separation of cadmium from the hydrochloric acid media was investigated experimentally by emulsion liquid membranes (ELMs) [1–3] using tri-iso-octylamine (TIOA) [4,5] as extractant and applied to the leach solution prepared from the zinc plant purification cake (CINKUR Co., Kayseri, Turkey). The effective parameters on both membrane and aqueous phase properties, such as the nature of acid and concentration of the acidic leach solution, concentration of stripping solution, extractant and surfactant concentrations, mixing speed, phase ratio, and cadmium concentration of the acidic leach solution on extraction of cadmium was optimized using a solution of synthetic cadmium in HCl. The selectivity and the efficiency of the improved ELM process were examined to the leach solution under optimum conditions. The results showed that 95% of cadmium was extracted by the ELM from the acidic leach solutions, containing Cd2+, Zn2+, Co2+ and Ni2+ ions, within 10 min with higher selectivity coefficient. ***Keywords:*** *Emulsion liquid membrane; tri-iso-octylamine; copper cake, acidic leach solution; cadmium extraction.* |
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