

عنوان مقاله:

Bench Scale Study of the Extraction of Gallium from Jajarm Bayer Process liquor

محل انتشار:

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خلاصه مقاله:

Bench scale extraction, concentration, purification and electrolysis of gallium from Jajarm Bayer process liquor containing 164.90 g/L of Na₂O, 86.70 g/L of Al₂O₃ and 197 mg/L of gallium was done using continuous mixersettler. The continuous experiments were done according to the results of our previous batch experiments using Kelex- 100, a 7-alkyl substituted-8 hydroxyquinoline as an extractant. First, continuous solvent extraction of gallium in mixersettler was done at different conditions of A:O ratios, retention time (mixing), number of stages and organic and aqueous flows. The best result was obtained at three stages and retention time of 28 minutes. A 85% of gallium was recovered in comparison to 93% in the batch experiments. Continuous scrubbing and stripping of the loaded organic phase was done and the pure concentrated solution of 250 ppm Ga was produced. More concentrating was done using TBP and the final alkali solution of 1700 ppm gallium was produced. This solution was used in the electrolysis experiments and the pure gallium metal of 98% was produced on cathode

کلمات کلیدی:

Gallium, Bayer Process, Electrolysis, Jajarm, Solvent Extraction

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