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Effects of phosphoric acid and ageing time on solvent extraction behavior of phosphotungstic acid

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Tungsten

Phosphotungstic acid

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Ageing time

Tri-butyl phosphate

Abstract: A sulfuric-phosphoric acid leaching process for scheelite was developed. In the process, tungsten exists as a soluble phosphotungstic acid in the leachate. Thus, extracting tungsten from the solution is necessary. Considering the advantages of solvent extraction with oxygen-containing solvents, 2-octanol and tri-butyl phosphate (TBP) were employed to extract tungsten from phosphotungstic-sulfuric acid solutions. The impacts of phosphoric acid and ageing time on the extraction were primarily investigated. It was determined that for $\text{H}_3\text{PW}_{12}\text{O}_{40}$ solution with high H_2SO_4 (49.71 g/L S) content, the WO_3 content in raffinates remained as low as 0.01 g/L after a single stage extraction

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