

Separation of Cu(II) and Mo(VI) from mine waters using two microporous membrane extraction systems

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This is a report on the separation and recovery of Cu(II) and Mo(VI) ions from two Chilean mine waters using two hollow fiber-type microporous liquid membrane extraction systems. LIX-860 (a salicylaldoxime) and Alamine 336 (a long-chain tertiary amine) were used as carrier extractants for copper and molybdenum, respectively. The measurements of the permeation of these metallic ions through the liquid membrane indicate that the selective transport of Cu(II) produced in respect to iron, arsenic, and aluminum in the experiments resulted from a sulfuric acid leach residual solution. The copper permeation is enhanced at pH 2.8 and when the concentration of LIX-860 in the organic phase was increased. Molybdenum and rhenium were efficiently separated from copper and iron metals, which were obtained from a nitric acid leach residual solution, by a liquid membrane prepared using Alamine 336 as the carrier compound. The membrane extractor consisted of two coupled reactors (one for extraction and