USE OF COCONUT OIL BASED N-PHENYLBENZOHYDROXAMIC ACID TYPE LIGAND FOR THE EXTRACTION OF TUNGSTEN AND MOLYBDENUM

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Coconut oil based N-phenylhydroxamic acid type ligand has been used for the extractive separation of titanium(IV). [1] The feasibility of the extractive separation of tungsten and molybdenum was studied using the same ligand. Over 90% of tungsten(VI) can be extracted from 1 M hydrochloric acid solution into a hexane solution of the ligand. The percentage extraction was found to be virtually unaffected by the ionic strength of the medium in the p^H range 0 to 5.0. It was shown that tungsten(VI) can be selectively extracted in the presence of large excess of iron(III), aluminium(III), phosphate and fluoride.

The extraction behaviour of molybdnum was found to be different from that of tungsten. In the presence of 1 M hydrochloric acid, 46% Mo(VI) is extractable into the hexane solution of the ligand. The percentage extraction increases to 60% in 4.3M hydrochloric acid medium and becomes zero in 8.5 M HCL. Over 80% of tungsten(VI) is extractable from 8.5M HCL medium. An extraction of a mixed species containing molybdenum(VI), tungsten(VI) and the ligand was observed when applied to a mixture of molybdenum(VI) and tungsten(VI) in 8.5 M HCL.

Reference

Gunawardhana, H. Dasaratha and Asirwatham, Dushyanthi (1982) Indian J. Chem., 21, 338

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