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TITLE: (6) Rhenium oxidation with air oxygen in the hydrometallurgical processing of copper concentrates

SOURCE: (15) Akademiya nauk Kazakhskoy SSR. Institut metallurgii i obogashcheniya. Trudy. v. 5, 1962, Tsvetnaya metallurgiya, 69 - 71

TEXT: To reveal rhenium concentration in products of copper and molybdenum ore processing, and to develop a technique of rhenium extraction, it is important to know its behavior in various concentration and metallurgical processes. The determination of the effect of pulp bubbling with air makes it possible to obtain information on the behavior of rhenium in flotation and hydrometallurgical processing of the concentrates. For this purpose the authors conducted a series of experiments on leaching-out copper sulfide concentrates without and with air-bubbling of the concentrate. The experimental conditions were a) the BOMK method; solid:liquid = 1:3; the composition of the solution: 10 g/l soda, 17 g/l calcium oxide; duration of mechanical stirring: 5 hours; temperature ~95°C; and

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Rhenium oxidation with air oxygen in...

b) the IM10 method, proposed by the authors: solid:liquid = 1:5; soda solution 30 g/l; mechanical stirring for 5 hours, at ~95°C. Aged dry, fresh dry and fresh wet concentrate samples were used. It was found that sample no. 1 was not affected by air bubbling. It is extracted by the IM10 method about 25% more than by the BOMK method. The effect of air oxygen is high for samples no. 2, dried at 80 - 100 C; Re extraction increases by 40% (BOMK) and by 19% (IM10). The effect on Re-oxidation decreases to 18% (BOMK) and to 3% (IM10) when sample no. 3 is treated by air bubbling. The experiments show that in all cases the IM10 method yields optimum results. Preliminarily dried concentrates should be lixiviated. During lixiviation the pulp should be subjected to intensive air bubbling, in particular when processing dried concentrate. There is 1 table.

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