336c Recovery of Molybdate Catalyst from Pulp Bleaching Effluent by Cationic Surfactants

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Molybdate is a catalyst in the bleaching of wood pulps by hydrogen peroxide. In this paper, we describe the formation of novel nanoparticulate precipitates of molybdate complexes with cationic surfactants. These precipitates are formed under specific solution conditions and take on different morphologies depending on the type of surfactant and solution chemistry. Scanning electron micrograph and EDAX investigations revealed interesting aster type and cubical crystalline structures for two different cationic surfactants. Particle size and concentration were effected by pH, salt concentrations and temperature besides other variables.

A recovery process for separating the molybdate from solution with filtration using membranes with nanopores as the central step followed by flotation to recover the surfactant was devised. The efficiency of this process in recovery is discussed.