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THE USE OF OXYGEN IN CATALYTIC OXIDATION OF SULFIDES IN TANNERY WASTES

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Abstract:

With its well-known biological toxicity, the excessive concentrations of sulfide in tannery wastewaters may upset the biological treatment processes, thus leading to a substantial decrease in the efficiency of treatment plants. The presence of sulfide in wastewaters may dramatically interfere with microbial activities and consequently disturb the function of the system as a whole. In this study, the most common and reliable method of sulfide elimination by natural aeration is examined. Significant factors, such as the process efficiency, the best and most appropriate types and concentrations of the catalyst, as well as detention time of aeration are determined. It is concluded that with an aeration time of 7 1/2 hours, sulfide removal was more than 98% effective, provided that optimum concentrations of the catalysts and adequate aeration are throughoutly maintained. The optimum concentrations of manganese and nickel are estimated to be 270 & 260 mg/l, respectively.

Keywords:

Tannery wastewater . Sulfide removal catalytic aeration . Natural aeration

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