

Treatment of bleached kraft pulp mill effluents with combination of activated sludge and activated carbon

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Wastewater from bleached kraft pulp mills constitutes a major source of aquatic pollution since it contains high organic substances causing high BOD, COD, extractives(resin acids), chlorinated organics(AOX), SS, fatty acids, tannins, lignin and its derivatives. Activated carbons are widely used as adsorbents in decontamination processes because of their extended surface area, high adsorption capacity, microporous structure and special surface reactivity. Addition of powdered activated carbon(PAC) to the biological reactor(aeration basin) of an activated sludge process influented bleached kraft pulp mills wastewaters increases the purifying capacity of the system. In this study, we examines the effect of PAC addition to activated sludge in the treatment of bleached kraft pulp mills which contain a large amount of nonbiodegradable matter. The effect of PAC addition has been studied in both batch and continouns-flow reactors. Actually after PAC addition, the mean COD and BOD₅ removal efficiency rose from 57% to 85% and 90% respectively. The combined PAC and activated sludge process seemed to be a combination of adsorption and biodegradation.