

Paint Industry wastewater contains high concentrations of suspended and dissolved substances. It is common practice to remove the suspended particles by physicochemical treatment such as coagulation/ flocculation and sedimentation or flotation. However, even after removal of the suspended particles, the soluble organic substances produce a waste water with a BOD of around 200 mg/ L and COD around 1600 mg/ L.

In this study the possibility of removal of this residual organic load by biological treatment was investigated. Waste samples from the emulsion paint stream of a paint factory were used, after pretreatment using ferric chloride as a coagulant. Initially, several wastewater samples were analyzed for physical and chemical characteristics, in order to develop the treatability testing program. The testing procedure was made up of two parts. One was the study of oxygen uptake in the Warburg Respirometer, using different dilutions of the wastewater.

This series of tests showed that the waste had to be diluted to 30% of its original concentration in order to overcome the toxic effects of the waste on the acclimated biomass. The second part of the investigation was done using a laboratory scale activated sludge treatment plant. This series of tests showed that it is possible to achieve a COD

removal of more than 85% using an F/M ratio of 0.1 per day, at a MLVSS of Approx. 4300 mg/L.