

Coagulation of polymeric wastewater discharged by a chemical factory

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Water Research 33 (2), pp. 521-529, 1999

Abstract: Treatment of an emulsified polymeric wastewater was investigated using sedimentation and coagulation. Settleability studies and jar tests were conducted in order to investigate the effect of sedimentation and coagulation on treatment of the wastewater, respectively. The effect of alum, ferric chloride and ferrous sulphate as coagulants on the treatment of samples collected from two different discharged streams was studied. The results of the settleability studies showed that the wastewater of both streams were in settleable. The jar tests revealed that the wastewater of the first stream was best treated when 200 mg/l of ferric chloride were dosed at pH 9. At optimum conditions, the turbidity and COD of the wastewater were reduced by 99.6 and 99.3 percent, respectively. Alum was found to produce the best results with wastewater of the second stream, when 250 mg/l were used at pH 9. At optimum conditions, turbidity and COD were reduced by 96.3 and 95.9%, respectively. The COD of the treated wastewater is well below the limit set by the regulatory authority, hence, the wastewater can be discharged to the biological treatment plant of the industrial city.