

The efficiency of iron removal from wastewater by oxidation and precipitation in the form of hydroxides was investigated. Four oxidizing agents, i.e., potassium permanganate, sodium hypochlorite, air and ozone with 3 precipitating agents: sodium hydroxide, sodium carbonate and calcium hydroxide at various pHs were used. Further coagulation using alum or PAC in various quantities and pHs showed that the efficiency of iron removal in every oxidizing agents with precipitating agents had the efficiency in the range of 99.9961 - 99.9988%. The efficiency of iron removal was decreased when the pH level dropped. The coagulation would be higher when alum or PAC were used at 300 and 200 mg/l respectively at pH 7. In this study, it showed that iron removal by air with calcium carbonate and sodium hydroxide was efficient. The residual iron concentration in the filtered water was less than the allowable standard of 0.300 mg/l. Therefore, the methods of iron removal by air with sodium hydroxide or air with calcium hydroxide or air with calcium carbonate and sodium hydroxide were suitable for use in the iron removal from wastewater in the iron industry.