

TREATMENT OF DYE INDUSTRY WASTEWATER WITH COAGULATION METHOD USING ALUM AND *POLY ALUMINIUM CHLORIDE (PAC)* COAGULANTS

ABSTRACT

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The dyestuff industrial wastewater treatment has been carried out using the coagulation method with alum coagulant and Poly Aluminum Chloride (PAC) to reduce the concentration of Chemical Oxygen Demand (COD). The purpose of this research was because the dye wastewater contains a high concentration of COD so it will be very dangerous if it is directly discharged into the environment. This research was conducted using the coagulation method with variations in pH and variations in coagulant weight to determine its effect on decreasing COD concentration, considering that pH and coagulant weight are factors that affect coagulation. Coagulation was carried out with variations in pH 5, 6, 7, 8, and 9 while the weight variations were 0.2; 0.4; 0.6; 0.8; and 1 gram. The results of the coagulation process were analyzed using a UV-Vis Spectrophotometer with a calibration curve method. The results showed that the best pH and the best weight for alum and PAC in reducing the COD of the dyestuff industrial wastewater was pH 9 and a weight of 1 gram with a percentage efficiency reduction of COD concentration of 90.04%.

Keywords: dyestuff industrial wastewater, COD, coagulation, alum, PAC