

**THE WASTEWATER TREATMENT OF TEXTILE INDUSTRY USING
OZONE TECHNOLOGY TO REDUCE BOD AND COD**

(A Case Study of Aqueous Waste in PT. Primatexco Indonesia Central Java)

ABSTRAK

PENGOLAHAN LIMBAH CAIR TEKSTIL MENGGUNAKAN TEKNOLOGI OZON UNTUK MENURUNKAN BOD DAN COD, (Studi Kasus Limbah Cair PT. Primatexco Indonesia Jawa Tengah). Telah dilakukan penelitian mengenai pengolahan limbah cair dengan menggunakan teknologi ozon. Sebagai cuplikan limbah cair diambil dari PT. Primatexco Batang Jawa Tengah. Sebanyak 1000 ml limbah cair diozonisasi dengan variasi waktu selama 0 menit, 20 menit, 40 menit, 80 menit, 100 menit, dan 120 menit. Metode analisa BOD menggunakan SNI 06-6989.14-2004 sedangkan untuk metode analisa COD menggunakan SNI 06-6989.15-2004. Penurunan kadar BOD dan COD disebabkan terdegradasinya senyawa-senyawa organik yang terkandung dalam air limbah, hal ini terjadi karena ozon memiliki kemampuan mengoksidasi senyawa organik yang kompleks menjadi senyawa organik sederhana. Pada umumnya degradasi senyawa organik menghasilkan karbon dioksida dan air. Hasil yang didapat dalam penelitian ini diketahui bahwa ozonisasi yang dilakukan selama 120 menit dapat menurunkan kadar BOD dari BOD awal 901 mg/L, menjadi 232 mg/L dengan efisiensi penurunan 74,25 %. Dan menurunkan kadar COD dari COD awal 3352 mg/L menjadi 811 mg/L dengan efisiensi penurunan 75,80 %.

Kata Kunci : ozonisasi, BOD, COD

ABSTRACT

THE WASTEWATER TREATMENT OF TEXTILE INDUSTRY USING OZONE TECHNOLOGY TO REMOVE OF BOD AND COD (A Case Study of PT. Primatexco wastewater Indonesia at Batang Central Java). A research on wastewater treatment using ozone technology was carried out. Samples were taken from PT. Primatexco in Batang, Central Java. 1000 ml of wastewater were ozonized with time variation of 0, 20, 40, , 80, 100, and 120 minutes, respectively. The BOD analysis method exploited was SNI 06-6989.14-2004, while the SNI 06-6989.15-2004 was utilized as COD analysis method. The removal BOD and COD contents were due to removal organic compounds contained in waste water. This was true since ozones were capable to oxidize organic compounds modifying complex to simple organic compounds. In general, removal organic compounds produced dioxide carbon and water. Results of this research showed that ozonization carried out during 120 minutes was able to remove BOD content, from initial BOD of 901 mg/L to 232 mg/L with removal efficiency of 74.25 %, also remove COD content, from initial COD of 3352 mg/L to 811 mg/L with removal efficiency of 75.80 %.

Key words: ozonization, BOD, COD