

ANALISA POTENSI CEMARAN LIMBAH CAIR LAUNDRY BERDASARKAN UJI KARAKTERISTIK DAN UJI TOKSISITAS AKUT (LC50)

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ABSTRAK

Perkembangan pesat usaha *laundry* rumahan di Indonesia saat ini berpotensi menimbulkan dampak negatif terhadap ekosistem perairan. Proses pengolahan limbah *laundry* yang belum dilakukan secara efektif dapat mengakibatkan pencemaran air. Peringatan awal (*early warning system*) mengenai potensi bahaya perlu dilakukan agar limbah *laundry* dapat diolah secara baik dan benar sehingga tidak menimbulkan pencemaran bagi lingkungan. Penelitian ini bertujuan untuk mengetahui karakteristik limbah *laundry* "A", nilai toksisitas akut (LC50) serta menentukan bahaya dari cemaran limbah *laundry* berdasarkan ekokinetika bahan pencemar di lingkungan Desa Sasak Panjang, Bogor. Penelitian ini dilakukan di laboratorium PT Sky Pacific Indonesia pada Februari hingga April 2019. Karakteristik limbah *laundry* "A" dibandingkan dengan baku mutu air limbah sesuai PERMEN LH No. 5 Tahun 2014, diperoleh hasil kandungan terbesar dalam limbah adalah surfaktan sebesar 183,10 mg/L. Parameter surfaktan, BOD₅, COD, TSS, dan pH melebihi nilai baku mutu lingkungan, sedangkan untuk parameter fosfat serta minyak dan lemak masih berada dibawah nilai baku mutu lingkungan. Uji toksisitas akut dilakukan dengan metode OECD 203 menggunakan biota uji ikan mas (*Cyprinus carpio*) dan diperoleh nilai LC50-96 jam limbah *laundry* "A" sebesar 2210 mg/L. Hasil pengujian LC50-96 jam limbah *laundry* "A" yang dibandingkan terhadap 3 kategori akut yang disyaratkan oleh GHS (*Globally Harmonized System of Classification and Labelling of Chemicals*), dinyatakan tidak berbahaya akut bagi populasi ikan di perairan. Hal ini dibuktikan belum timbul bahaya terhadap kolam budidaya ikan, tanaman, dan masyarakat sekitar Desa Sasak Panjang secara langsung.

Kata Kunci: LC50-96 jam, limbah *laundry*, potensi bahaya.

ABSTRACT

*The rapid development of the home laundry business in Indonesia potentially to have a negative impact on aquatic ecosystems. Laundry wastewater treatment processes that have not been effectively done can cause the water pollution. Early warning regarding potential hazards needs to be done so that laundry waste can be treated properly and correctly so as not to cause pollution to the environment. This study are determine the characteristics of "A" laundry waste, acute toxicity value (LC50) and determine the danger of laundry waste contamination based on pollutant ecokinetics in the environment of Sasak Panjang Village, Bogor. This research was conducted in the laboratory of PT Sky Pacific Indonesia in February to April 2019. The characteristics of "A" laundry waste were compared with the wastewater quality standard according to PERMENLH No. 5 of 2014, obtained the greatest content of waste in surfactants was 183,10 mg/L. The surfactant, BOD₅, COD, TSS, and pH parameters exceed the environmental quality standard, while the phosphate parameters and oil and fat are still below the environmental quality standard value. The acute toxicity test analyzed by using the OECD 203 method using carp carp (*Cyprinus carpio*) as biota test and the result of LC50-96 hour value of laundry waste "A" is 2210 mg/L. The LC50-96 hour of "A" laundry waste test results compared to the 3 acute category required by the GHS (*Globally Harmonized System of Classification and Labeling of Chemicals*), were declared not acutely harmful to fish populations in the water. This is proven by the fact that there has not been a direct danger to the aquaculture ponds, plants and communities around Sasak Panjang Village.*

Keywords: laundry waste, LC50-96 hours, potential hazard.

