

## KARAKTERISTIK KIMIA *SLUDGE* LIMBAH CAIR

### INDUSTRI PENYAMAKAN KULIT PT BUDI MAKMUR JAYAMURNI

#### Intisari

Industri Penyamakan Kulit adalah salah satu industri yang tidak terlepas dari masalah-masalah limbah atau buangan yang dihasilkan baik limbah cair, padat dan lumpur (*sludge*) yang merupakan pencemar cukup potensial jika tidak dikelola dengan baik. *Sludge* yang dihasilkan, biasanya dipres dengan filter pres untuk mengurangi kadar air dan memperkecil volume *sludgenya*. *Sludge* tersebut sebelum dimanfaatkan atau dibuang ke lingkungan memerlukan proses pengolahan yang disesuaikan dengan karakter dari *sludge* tersebut. Pada penelitian dilakukan pengujian-pengujian untuk mengetahui karakteristik kimia *sludge*, sehingga dapat ditentukan pengolahan selanjutnya. Sampel yang digunakan berupa *sludge* limbah penyamakan kulit dari industri PT Budi Makmur yang sudah difilter pres. Pengujian yang dilakukan meliputi kadar kalsium, Fe total, nitrit, nitrat, fosfat, sulfat, klorida, amonia, nitrogen, karbon, natrium, kalium, dan kadar krom. Dari hasil pengamatan di laboratorium diperoleh hasil bahwa rata-rata kandungan *sludge* tersebut adalah kadar  $\text{Ca}^+$  713,11 ppm, Na 101,84 ppm, K 18,69 ppm,  $\text{NH}_4$  3,84 ppm, Fe total, nitrat, dan fosfat tidak dapat terdeteksi dalam ppm, nitrit 0,02 ppm,  $\text{Cl}^-$  588,78 ppm,  $\text{SO}_4$  61,57 ppm, Cr total 15,79 ppm,  $\text{Cr}^{+6}$  3,21 ppm,  $\text{Cr}^{+3}$  12,58 ppm, protein kasar 8,21% dan karbon 22,55%. Berdasarkan kandungan nutriennya, *sludge* limbah penyamakan kulit masih dapat digunakan sebagai pupuk tanaman pertanian, tetapi sebaiknya dikomposkan terlebih dahulu agar unsur hara yang terdapat didalamnya dapat segera dimanfaatkan oleh tanaman.

(Kata Kunci : penyamakan, limbah, *sludge*).

**CHEMICAL CHARACTERISTIC OF LIQUID-WASTE SLUDGE OF  
LEATHER TANNING INDUSTRY PT BUDI MAKMUR JAYAMURNI**

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**Abstract**

Leather tanning industry is one that can not be liberated from waste or exile which is produced as liquid waste, solid and mud (sludge) that constitute quite potential pollution if it is not well-managed. Sludge usually produced by pressing using filter press to reduce the level of water and to make the volume of sludge smaller. The sludge is used or thrown away, it needs processing appropriately according to the character of the sludge it self. On the research some tests were conducted to find out chemical characteristic of sludge, so it could determine the next processing. The samples used were sludge from leather tanning waste from PT Budi Makmur Jayamurni industry that had been press-filtered. The tests conducted included calcium level, Fe total, nitrite, nitrate, phosphate, sulphate, chloride, ammonia, nitrogen, carbon, sodium, potassium, and chrome level. From the result of observation at laboratory, it was obtained that the average of the sludge content was the level of calcium 713.11 ppm, sodium 101.84 ppm, potassium 18.69 ppm, ammonia 3.84 ppm, while the Fe total, nitrate, and phosphate could not be detected in ppm, the nitrite 0.02 ppm, chloride 588.78 ppm, sulphate 61.57 ppm, Chrome total 15.79 ppm, chrome hexavalent 3.21 ppm, chrome trivalent 12.58 ppm, crude protein 8.21% and carbon 22.55%. Based on the contents of nutrient, the sludge of leather tanning waste still could be used as agricultural fertilizer but it was better if it was turned, first into compost, so fertilizer substance in its content could be utilized by the plant immediately.

(Key words: Leather Tanning, Waste, Sludge)