ABSTRAK

Suatu metode analisis formaldehida pada sampel tisu toilet dengan spektrofotometer ultraviolet - visibel telah dilakukan dan divalidasi meliputi akurasi, presisi, linearitas, Batas Deteksi (BD) dan Batas Kuantitasi (BK). Dari identifikasi formaldehida dengan larutan $FeCl_3$ dan H_2SO_4 pekat didapatkan hasil bahwa tiga dari lima merek tisu toilet positif mengandung formaldehida. Penetapan kadar terhadap tiga merek tisu toilet yang positif mengandung formaldehida dilakukan dengan metode spektrofotometer visibel menggunakan pereaksi Nash dan menghasilkan warna kuning yang konstan dan diukur pada daerah visibel pada panjang gelombang 409,8 nm. Uji Linearitas didapatkan nilai r = 0,9992; batas deteksi (BD) 0,2481 mg/L dan batas kuantitasi (BK) 0,8271 mg/L. Uji presisi *intra-day* diperoleh simpangan baku 0,0105; 0,0087; 0,0145 dengan koefisien variasi berturut-turut 0,5155; 0,2127; 0,2431 %, presisi *inter-day* diperoleh simpangan baku 0,0131; 0,0366; 0,0557 dengan koefisien variasi berturut-turut 0,6435; 0,9020; 0,9379 %. Akurasi 96,511; 97,229; 92,562 %. Dari empat puluh gram sampel tisu toilet, diperoleh kadar formaldehida pada sampel A, B, dan C masing-masing sebesar 0,366; 1,487; 1,986 mg/kg. Jumlah formaldehida yang terdapat di tiap gulung tisu toilet pada sampel A, B dan C masing-masing sebesar $3,66 \times 10^{-5}$; $1,487 \times 10^{-4}$; $1,986 \times 10^{-4}$ %.

Kata kunci: Formaldehida, Spektrofotometer UV-Visibel, tisu toilet

ABSTRACT

Analysis method of formaldehyde of toilets paper with spectroscopy visible has been done and validated include accuracy, precision, linearity, LOD (Limit of Detection) and LOQ (Limit of Quantitation). Identification of formaldehyde with $FeCl_3$ solution and concentrated H_2SO_4 show that three of the five toilets paper positive contained formaldehyde. The determination of formaldehyde levels was performed by visible spectrophotometry method using Nash reagent and showed a stable yellow color, and was analyze by spectroscopy at 409,8 nm. Linearity of the analytical method showed that r = 0,9992; limit of detection (LOD) value was 0,2481 mg/L and limit of quantitation (LOQ) value was 0,8271 mg/L. I*ntra-day* precision, Standart Deviation (SD) value were 0,0105; 0,0087; 0,0145 respectively, with RSD value were 0,5155; 0,2127; 0,2431 % respectively. I*nter-day* precision, Standart Deviation (SD) value were 0,0131; 0,0366; 0,0557 respectively, with RSD value were 0,6435; 0,9020; 0,9379 % respectively. Accuracy value were 96,511; 97,229; 92,562 %. From fourty grams of toilets paper were obtained formaldehyde in sample A, B and C 0,366; 1,487; 1,986 mg/kg respectively. Each roll of toilets paper was found to contain formaldehyde in sample A, B and C in amount of 3,66 x 10^{-5}; 1,487 x 10^{-4}; 1,986 x 10^{-4} % respectively.

Keyword: Formaldehyde, Spectrophotometry UV-Visible, Toilets paper