

신발제조업 근로장의 유기용제 폭로농도에 관한 연구

The Concentration of Toluene in Blood and Hippuric Acid in Urine of Toluene-exposed Workers

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◎ Abstract

Toluene in air and blood and hippuric acid in urine were checked for 50 female workers who had been exposed to toluene and had normal liver function in shoe making factories. Toluene in air was sampled with charcoal by personal air sampler at least 5 times and analyzed by gas chromatography.

At the end of shife, each worker's blood was collected with a vacuum tube containing EDTA for detecting toluene in blood and analyzed by gas chromatography equipped with headspace sampler. Spot urine was also collected in a polyethylene bottle for determining creatinine and hippuric acid concentration by high performance liquid chromatography.

Means of toluene in air and blood was 35.64ppm and 0.386mg/l, respectively. Mean of hippuric acid in urine corrected by creatinine was 1.78g/g creatinine. Toluene in air showed a good correlation with toluene in blood($r=0.6766$) and hippuric acid in urine($r=0.4603$). Toluene in blood and hippuric acid in urine corresponded to the exposure of 100ppm toluene in air was 0.525mg/l and 2.312g/g creatinine, respectively.