

# Analisis pajanan benzena inhalasi dan efek pada saluran pernapasan pekerja di industri alas kaki informal desa Pagelaran Ciomas Bogor, tahun 2017 = Inhalation benzene exposure analysis and effects on respiratory tract workers in the informal footwear industry in Pagelaran Ciomas Bogor 2017

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## Abstrak

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Pada proses produksi alas kaki, lem sering digunakan sebagai bahan perekat yang mengandung benzena. Benzena telah ditetapkan sebagai bahan karsinogen pada manusia dimana jalur pajanan utama melalui inhalasi. Pajanan benzena terhadap tubuh mempunyai dampak yang sangat buruk pada kesehatan. Penelitian ini bertujuan untuk mengestimasi tingkat risiko kesehatan pekerja menurut pajanan benzena udara di lingkungan kerja dan mengetahui gambaran intake non karsinogen dan intake karsinogen pajanan benzena terhadap gejala gangguan pernapasan pekerja. Penelitian ini merupakan studi cross-sectional dan pendekatan analisis risiko pada pekerja di empat industri alas kaki informal di Desa Pagelaran, Ciomas, Bogor pada Agustus dan September 2017. Jumlah sampel sebanyak 96 pekerja yang diperoleh dengan metode purposif sampling. Sampel udara sebanyak 12 titik untuk mengukur konsentrasi benzena di dalam ruang kerja yang diukur dengan alat perangkap udara dan instrument Gas Chromatography GC. Data pekerja diperoleh melalui wawancara, pengukuran tinggi badan dengan microtoise dan berat badan menggunakan alat timbangan. Hasil penelitian menunjukkan 21 pekerja memiliki risiko kanker  $ECR > 1 \times 10^{-4}$  dan 11 pekerja memiliki risiko non kanker real time RQ

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In the production process of footwear, glue is often used as an adhesive material containing benzene. Benzene has been established as a carcinogenic substance in humans where the main exposure pathway is through inhalation. Benzene exposure to the body has a very bad impact on health. This study aims to estimate the level of occupational health risk by exposure to benzene in the work place and to know the scope of non carcinogenic intake and carcinogen intake of benzene exposure against respiratory symptoms. This study uses cross sectional study design and risk analysis approaches to workers in four informal footwear industries located in Pagelaran, Ciomas, Bogor in August to September 2017. The total sample is 96 workers obtained by purposive sampling method. Air samples of 12 points to measure benzene concentrations in the workspace as measured by air trapping device and Gas Chromatography GC instrument. Workers data obtained through interviews, measurements of height with microtoise and weight using the instrument weighing scale. The results showed 21 workers had cancer risk  $ECR 1 \times 10^{-4}$  and 11 workers had non cancer risk real time RQ