

Penilaian Risiko Kesehatan Akibat Paparan Benzene, Toluene, dan Xylene pada Pekerja di Stasiun Pengisian Bahan Bakar Umum (SPBU) X Beji Depok 2024

Khan, Mirza Saleh

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Abstrak

Tingginya tingkat penguapan dari benzene, toluene, dan xylene (BTX) dalam bensin membuat pekerja di stasiun pengisian bahan bakar umum (SPBU) berisiko tinggi terpajan BTX secara inhalasi. Adanya aktivitas pengisian bahan bakar kendaraan bermotor dan aktivitas pengisian tangki pendam (underground tank) membuat pekerja di SPBU berisiko tinggi kontak dengan bensin yang mengandung BTX secara dermal. Penelitian ini bertujuan untuk menilai besarnya tingkat risiko kesehatan pada pekerja di SPBU X Beji Depok akibat paparan BTX melalui rute paparan inhalasi dan dermal. Design penelitian yang digunakan adalah analisis deskriptif dengan menggunakan metode CHRA dari DOSH Malaysia untuk menilai tingkat risiko kesehatan. Penilaian risiko kesehatan rute paparan inhalasi dilakukan secara kuantitatif. Sementara itu, penilaian risiko kesehatan rute paparan dermal dilakukan secara kualitatif. Berdasarkan observasi dan wawancara terdapat 5 similar exposure group (SEG) untuk paparan BTX secara inhalasi, yaitu Operator Shift-1, Operator Shift-2, Operator Shift-3, Shift Leader, dan Supporting Team. Lalu, untuk paparan BTX secara dermal terdapat 2 SEG, yaitu Operator dan Shift Leader. Untuk paparan inhalasi benzene, SEG Operator Shift-1, Operator Shift-2, dan Shift Leader memiliki tingkat risiko kesehatan tinggi (high risk), sedangkan SEG lainnya memiliki tingkat risiko moderat (moderate risk). Untuk paparan aditif toluene dengan xylene secara inhalasi hanya SEG Operator Shift-3 yang memiliki tingkat risiko moderat (moderate risk), sedangkan SEG lainnya memiliki tingkat risiko rendah (low risk). Untuk paparan secara dermal, kedua SEG memiliki tingkat risiko tinggi (high risk) akibat paparan benzene, sedangkan akibat paparan toluene dan xylene kedua SEG memiliki tingkat risiko moderat (moderate risk). Rekomendasi yang diberikan adalah mengganti nozzle menjadi nozzle otomatis, memasang vapor recovery system, memasang rubber splash collars di sekitar nozzle, dan memberlakukan layanan self-

The high evaporation rate of benzene, toluene and xylene (BTX) in gasoline puts workers at public fuel stations (SPBU) at high risk of inhalation exposure to BTX. The existence of motor vehicle refueling activities and underground tank filling activities puts workers at high risk of dermal contact with BTX containing gasoline. This study aims to assess the level of health risk to workers at gas station X Beji Depok due to BTX exposure through inhalation and dermal exposure routes. The research design used was descriptive analysis using the CHRA method from DOSH Malaysia to assess the level of health risk. The health risk assessment of inhalation exposure route was done quantitatively. The health risk assessment of the dermal exposure route was carried out qualitatively. Based on observations and interviews, there are 5 similar exposure groups (SEG) for BTX inhalation exposure, namely Operator Shift-1, Operator Shift-2, Operator Shift-3, Shift Leader, and Supporting Team. Then, for dermal BTX exposure, there are 2 SEG, namely Operator and Shift Leader. For benzene inhalation exposure, the SEG of Operator Shift-1, Operator Shift-2, and Shift Leader have a high health risk level, while the other SEG have a moderate risk level. For inhalation exposure to toluene additive with xylene, only the SEG of Operator Shift-3 have a moderate risk level, while the other SEG have a low

risk level. For dermal exposure, both SEG have a high risk level due to benzene exposure, while due to toluene and xylene exposure both SEG have a moderate risk level. Recommendations are to change the nozzle to an automatic nozzle, install a vapor recovery system, install rubber splash collars around the nozzle, and implement self-service.</div>