Kajian Risiko Kesehatan Terkait Pajanan Benzene, Toluene, dan Xylene pada Pekerja Kilang Minyak di PT. X Tahun 2022-2024 = Health Risk Assessment related to Benzene, Toluene, and Xylene Exposure in Oil Refinery at Company X in 2022-2024

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Abstrak

Pekerja pada unit produksi minyak dan gas bumi berisiko terpajan berbagai bahaya kimia. Salah satu komponen bahan kimia dari minyak bumi adalah volatile organic compounds (VOC), dengan contoh bahan yang terkenal akan toksisitasnya adalah benzene, toluene dan xylene. Penelitian ini bertujuan untuk menganalisis risiko kesehatan terkait pajanan benzene, toluene dan xylene pekerja kilang minyak san gas di PT. X. Penelitian ini menganalisis data sekunder pajanan personal BTX melalui rute inhalasi menggunakan active sampler. Dengan menggunakan metode Chemical Health Risk Assessment (CHRA) dari Department of Safety and Health, Malaysia ditemukan bahwa risiko pajanan benzene pada SEG CDU (crude distillation unit) terkategori risiko sangat tinggi. Untuk pajanan toluene dan xylene berada pada tingkat risiko kesehatan rendah pada hampir seluruh SEG. Berdasarkan hasil penelitian, diperlukan pengendalian yang tepat untuk mengatasi pajanan benzene, toluene dan xylene. Salah satu pengendalian yang direkomendasikan adalah meningkatkan konsistensi penggunaan alat pelindung diri, monitoring pajanan secara kontinu, melaksanakan biomonitoring dan pemeriksaan sel darah tepi.

.....Workers in oil and gas production units are at risk of exposure to various chemical hazards. One of the chemical components of petroleum is volatile organic compounds (VOC), with examples of materials known for their toxicity being benzene, toluene and xylene. This study aims to analyze health risks related to exposure to benzene, toluene and xylene of oil and gas refinery workers at PT. X. This study analyzes secondary data on personal exposure to BTX via the inhalation route using an active sampler. Using the Chemical Health Risk Assessment (CHRA) method from the Department of Safety and Health, Malaysia, it was found that the risk of benzene exposure in the SEG CDU (crude distillation unit) was categorized as very high risk. Exposure to toluene and xylene is at a low health risk level in almost all SEGs. Based on the research results, appropriate control is needed to overcome exposure to benzene, toluene and xylene. One of the recommended controls is increasing the consistent use of personal protective equipment, continuous monitoring of exposure, carrying out biomonitoring and examining peripheral blood cells.