# Gambaran Pajanan Benzene, Toluene, dan Xylene di Laboratorium Pengujian Migas PT SCI Tahun 2021 Serta Penilaian Tingkat Risiko Kesehatan Mengacu Pada SQRA dan CHRA = Overview of Benzene, Toluene and Xylene Exposure at an Oil and Gas Testing Laboratory PT SCI in 2021 and Chemical Health Risk Assessment Refers to SQRA and CHRA

Ryan Rachmawan, author



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Abstrak

Berbagai macam pelarut organik digunakan di laboratorium pengujian PT SCI, termasuk benzene, toluene dan xylene (BTX). BTX diketahui sebagai bahan kimia yang berbahaya dan dapat menimbulkan risiko terhadap kesehatan baik dampak akut maupun kronis. Oleh karena itu, perlu dilakukan penilaian risiko Kesehatan terkait pajanan BTX guna menilai kecukupan metode pengendalian yang telah diimplementasikan di laboratorium PT SCI. Penelitian ini menilai risiko Kesehatan terkait inhalasi pajanan BTX dengan metode CHRA DOSH Malaysia secara kualitatif dan kuantitatif; dibandingkan dengan metode SQRA Singapura secara kuantitatif, tingkat risiko terkait pajanan benzene masuk ke dalam kategori tinggi, sedangkan pajanan toluene dan xylene memiliki risiko moderat. Secara kuantitatif (CHRA), pajanan benzene (TWA pengukuran = 0,025 ppm) memiliki risiko moderat (RR=5), sedangkan toluene (TWA pengukuran = 0,104 ppm) dan xylene (TWA pengukuran = 0,077 ppm) memiliki tingkat risiko rendah (RR=2). Dengan menggunakan metode SQRA diperoleh nilai tingkat risiko moderate untuk benzene, dan rendah untuk toluene, serta xylene. Dapat disimpulkan bahwa metode kualitatif CHRA overestimate metode kuantitatif CHRA; dan metode kuantitatif CHRA dan SQRA memperlihatkan hasil yang sebanding.
.....A various of organic solvents are used in PT SCI's testing laboratory, including benzene, toluene, and xylene (BTX). BTX is known as a hazardous chemical and can pose a health risks, both acute and chronic. Therefore, it is necessary to conduct a health risk assessment related to BTX exposure in order to assess the adequacy of the control methods that have been implemented in the PT SCI laboratory. This study assessed the health risks associated with inhalation of BTX exposure with the CHRA DOSH Malaysia method qualitatively and quantitatively and compared to the Singapore quantitative method SQRA, the level of risk associated with benzene exposure is in the high category, while exposure to toluene and xylene has a moderate risk. CHRA in quantitatively, benzene exposure (TWA measurement = 0.025 ppm) had a moderate risk (RR=5), while toluene (TWA measurement = 0.104 ppm) and xylene (TWA measurement = 0.077 ppm) had a low risk level (RR=2). By using the SQRA method, the risk level is moderate for benzene, and low for toluene and xylene. It can be concluded that the CHRA qualitative method overestimates the CHRA quantitative method; and quantitative methods CHRA and SQRA showed comparable results.