Kajian risiko kesehatan akibat pajanan bahan kimia chloroform, tetrachloroethylene, dan dichloromethane di laboratorium penguji lingkungan PT X tahun 2019 = Chemicals health risk assessment of chloroform, tetrachlorethylene, and dichloromethane at an environmental testing laboratory PT X in 2019

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Abstrak

Penggunaan berbagai pelarut organik volatil di labotatorium pengujian menimbulkan risiko terhadap dampak kesehatan baik dalam jangka pendek maupun jangka panjang. Oleh karena itu perlu dilakukan kajian risiko kesehatan. Chemical Health Risk assessment (CHRA) atau kajian risiko kesehatan yang dikembangkan oleh Department of Occupational Safety and Health (DOSH), Ministry of Human Resources, Malaysia (2018) digunakan dalam studi ini untuk menilai risiko kesehatan akibat pajanan inhalasi dan dermal dari 3 (tiga) pelarut organik volatil yaitu chloroform, dichlorometane, dan tetrachloroethylee. Penelitian dilakukan terhadap 3 (tiga) karyawan laboratorium PT X yang bekerja di 3 (tiga) lokasi ruangan yang berbeda. Penilaian tingkat risiko atau risk rating (RR) pajanan bahan kimia melalui inhalasi dilakukan secara kualitatif dan kuantitaif, sedangkan pajanan melalui dermal dinilai secara kualitatif saja. Diperoleh bahwa hasil penilain tingkat risiko pajanan bahan kimiakimia melalui inhalasi secara kualitatif adalah chloroform (RR=16) dengan tingkat risiko tinggi, dichlorometane (RR=15) dengan tingkat risiko menengah, dan tetrachloroethylene (RR=12) dengan tingkat risiko menengah Hasil penilaian tingkat risiko pajanan bahan kimia melalui inhalasi secara kuantitaif adalah chloroform (TWA pengukuran = 18,460 ppm) dengan tingkat risiko tinggi (RR=20), dichlorometane (TWA pengukuran = 0,362 ppm) dengan tingkat risiko rendah (RR=3), dan tetrachloroethylene (TWA pengukuran = 0,560) dengan tingkat risiko rendah (RR=3). Hasil penilaian tingkat risiko pajanan bahan kimia melalui dermal secara kualitatif dengan luas area kontak kecil dan durasi panjang adalah chloroform (M2) dengan tingkat risiko menengah, dichlorometane (M2) dengan tingkat risiko menengah dan tetrachloroethylene (M2) dengan tingkat risiko menengah. Pengendalian untuk menurunkan risiko pajanan chloroform melalui inhalasi (AP-3) direkomendasikan dalam penelitian ini.

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The use of various organic solvents in the laboratory test the risks to health risks in both the short and long term. Therefore a health risk assessment is needed. The Chemical Health Risk Assessment (CHRA) or health risk assessment developed by the Department of Occupational Safety and Health (DOSH), Ministry of Human Resources, Malaysia (2018) was used in this study to estimate health risks due to inhalation and dermal exposure of 3 (three) volatile organic solvents namely chloroform, dichloromethane and tetrachloroethylee. The study was conducted on 3 (three) PT X laboratory employees who worked in 3 (three) different room locations. Assessment of the level of risk or risk rating (RR) exposure chemicals through inhalation is carried out qualitatively and quantitatively, while exposure through dermal through qualitative publications. Obtained from the results of the qualitative assessment of the risk of exposure to chemicals through inhalation were chloroform (RR = 16) with high risk levels, dichloromethane (RR = 15)

with the level of moderate risk, and tetrachlorethylene (RR = 12) with a high risk of exposure risk chemicals through determination of chloroform levels (TWA = 18,460 ppm) with high risk levels (RR = 20), dichloromethane (measurement TWA = 0.362 ppm) with low risk levels (RR = 3), and tetrachlorethylene (TWA. = 0.560) with levels low risk (RR = 3). The qualitative progress of the level of exposure to chemicals through the skin with a large area of small contact and long duration is chloroform (M2) with an inflation rate, dichloromethane (M2) with a high risk level and tetrachlorethylene (M2) with a medium risk level. Control to reduce the risk of exposure to chloroform through inhalation (AP-3) was approved in this study.