

Assessing Health Risks Of Chemicals: Safeguarding Worker Health

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Structured Abstract

Background: The manufacturing sector often exposes workers to chemicals that pose various health hazards. PCA Group Sdn. Bhd., involved in signboard assembly and painting processes, utilizes several hazardous chemicals, including Acrifix, Sikaflex 221, VT-210 High Performance Sealant, and Trade Spray Aerosol Paints. This study aimed to assess the chemical health risks posed to workers and evaluate the adequacy of existing control measures in alignment with USECHH Regulations 2000.

Methods: A qualitative Chemical Health Risk Assessment (CHRA) was conducted based on the CHRA Manual (3rd Edition, 2018). Data collection methods included walkthrough inspections, structured interviews, and document reviews (e.g., SDS, SOPs). The study evaluated health risks through inhalation and dermal exposure routes and rated them using hazard rating (HR), exposure rating (ER), and risk rating (RR). Action Priority (AP) was determined to assess the need for control interventions.

Results: Findings indicated moderate to high health risks, especially from inhalation exposure during painting operations. Dermal exposure risks were high across all chemicals assessed. PPE use was found adequate in some units, but engineering and administrative controls were lacking or outdated. Several gaps were noted in chemical monitoring, SDS documentation, and emergency preparedness.

Conclusion: While basic safety protocols are present, critical gaps in engineering controls and hazard communication necessitate immediate improvements. Recommendations include upgrading ventilation systems, enhancing PPE policies, enforcing SDS availability, and instituting comprehensive training and medical surveillance programs. Proactive adoption of these measures is essential to safeguard workers' health and ensure regulatory compliance.

Keywords: Chemical health risk assessment, dermal exposure, inhalation risk, PPE adequacy, USECHH compliance

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