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Chemical Health Risk Assessment (CHRA) at Palm Oil Product Laboratory

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Structured Abstract

Background: Chemical Health Risk Assessment (CHRA) is crucial for protecting laboratory workers that work with hazardous substances. This study focuses on assessing risks in the Palm Oil Product Laboratory where workers are potentially exposed to chemicals. The objectives of this assessment are to identify chemical hazards, evaluate the degree of exposure toward workers, evaluate the adequacy of existing control measures and recommend improvements to enhance workplace safety.

Methods: The method for this study was developed by the Department of Occupational Safety and Health (DOSH). The study followed the Manual of Recommended Practice on Assessment of Health Risks Arising from Chemical Hazardous to Health (3rd edition). The assessment findings were gathered through site walkthrough, document reviews and interviews with the workers. Two work units that have been analysed involving iodine value analyst and peroxide value analyst. The chemicals that have been analysed from both work units are Potassium Iodide, Wijs Solution, Solvent and Acetic Acid-Chloroform.

Results: The result show that the dermal exposure risks are higher for both of the work units rather than inhalation exposure risks. For Potassium Iodide, the data shows that it has the highest hazard rating (HR=4) in both work units. Existing controls that including engineering control like fume hoods, isolation practices, personal protective equipment (PPE), organisational measures and emergency response preparedness were assessed and found to be adequate in controlling the risk.

Conclusion: In conclusion, the current safety practice measures, technical controls and emergency preparedness protocols have been determined to be adequate in controlling the chemical hazards exposure risk. Regular inspection, training and following the standard operating procedures should always be done to ensure a safety framework. No immediate action is required as the existing control measures are adequate to reduce the risk associated with inhalation and dermal exposure even though there might be some remaining risk after applying control measures.

Keywords: CHRA, hazardous substances, control measures, chemical hazards, DOSH

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