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Implementation of Chemical Health Risk Assessment (CHRA) for Hazard Classification and Safety at General Chemistry Laboratory at Faculty of Applied Sciences, in Universiti Teknologi MARA (UiTM) Shah Alam, Selangor Malaysia

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Structured Abstract

Background: This study presents a comprehensive Chemical Health Risk Assessment (CHRA) conducted in the general chemistry laboratory at Universiti Teknologi MARA, Shah Alam. The primary objective was to evaluate the potential health risks associated with chemical exposure to laboratory personnel and to propose appropriate risk mitigation strategies. The CHRA was essential for evaluating risks from Chemical Hazardous to Health (CHTH) in the lab. It systematically gathered data, set exposure limits, and reviewed safety measures, following WHO-recommended steps like hazard identification and risk characterization.

Methods: The methodology followed the Manual of Recommended Practice on Assessment of The Health Risks Arising from The Use of Chemicals Hazardous to Health at The Workplace (2017), 3rd edition, by the Department of Safety and Health (DOSH), Malaysia. The study involved a systematic review of literature, planning of research design, assembly of apparatus, data collection, and analysis. The Gantt chart and flowcharts provided in the document illustrate the structured approach to the research activities and overall methodology.

Results: The safety risks of chemicals such as 2-propanol, ammonium chloride, and ethanol 95% were assessed using a structured table with criteria like Frequency Rating (FR), Duration Rating (DR), and Risk Rating (RR). All chemicals were rated uniformly, indicating a similar risk level. The assessment revealed a moderate health risk but highlighted significant room for improving safety measures. Recommendations include enhancing ventilation, enforcing strict chemical handling protocols, providing extensive chemical safety training, creating a chemical inventory system, and conducting regular safety inspections to comply with safety guidelines.

Conclusion: The conclusion of the assessment underscores the importance of regular CHRA to prevent adverse health effects among laboratory workers and to improve their quality of life. The study serves as a call to action for immediate implementation of CHRA in similar settings.

Keywords: Chemical Health Risk Assessment, Laboratory Safety, Chemical Exposure, Risk Mitigation.

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