

## **Chemical Health Risk Assessment (CHRA) at Organic Chemistry Laboratory in UiTM Shah Alam**

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### **Structured Abstract**

**Background:** This assessment was conducted at Organic Chemistry Lab, A606, which was an organic chemistry laboratory located at Faculty of Applied Science, UiTM Shah Alam. Besides, this assessment aims to identify the hazards posed by each Chemical Hazardous to Health (CHTH) use within the workplace and to evaluate the degree of exposure of workers to the Chemical Hazardous to Health (CHTH), either through inhalation, dermal or ingestion. Chemical Health Risk Assessment (CHRA) assists in the systematic identification and description of the hazards associated with the chemical substances.

**Methods:** Thus, the assessment used CHRA methods under the guidance of the third edition of a Manual of Recommended Practice on Assessment of the Health Risks Arising from the Use of Chemicals Hazardous to Health at the Workplace to identified chemicals, determined Hazard Rating, evaluated exposure, assessed the adequacy of the control measures that have been carried out, concluded the CHRA results, and identified the recommendations that need to be made. In this assessment, the work unit has assessed as the Organic Chemistry (OC) Laboratory Assistant. However, the CHTH also was identified which consists of 6 chemicals, Acetophenone 3-nitrobenzaldehyde, Benzalacetophenone Mixture, Sodium Hydroxide NaOH, 95% Ethanol, and Methanol.

**Results:** After conducted the CHRA, the results showed that the summary of overall risk level was determined which was for the inhalation risk level has High risk = 2, Moderate risk = 3 and low risk = 1 with the total of inhalation risk level were 6. Thus, the dermal risk level has High risk = 3, Moderate risk = 8 and low risk = 2 with the total of inhalation risk level were 13. So, it concluded that dermal exposure posed a higher risk with more moderate and high-risk level compared to inhalation exposure.

**Conclusion:** Overall, the results showed that 95% Ethanol and Methanol have a highest hazard posed and should be managed with the appropriate safety precautions while the Acetophenone posed the lowest hazard.

**Keywords:** Chemical Health Risk Assessment (CHRA), degree of exposure, inhalation, dermal exposure, exposure evaluation

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