APRIL 2026 HEALTH, SAFETY AND ENVIRONMENT OFFICE

SAFETY ALERT

Chemical Splash Incident in a Research Laboratory

Incident Summary

A chemical splash incident occurred in a research laboratory involving a postgraduate student. At the time of the incident, the student was working without appropriate personal protective equipment (PPE). During the experiment, the student noticed that the experimental set-up was overheating and attempted to handle the situation. Subsequently, a chemical splash occurred from inside the fume hood, contacting the student's face, arms and body. It was observed that the fume hood sash was opened above the recommended safe working height of 500 mm, which increased the risk of exposure.

This incident was serious in nature, as a large area of the student's body was exposed to the chemical. While the outcome was mitigated because the chemical involved was not highly hazardous or corrosive, such an exposure could have had life-threatening consequences if a corrosive or highly toxic substance had been involved.

Immediate Response

The student took appropriate and immediate action by using the nearest emergency eyewash and safety shower to decontaminate the affected areas. Due to the prompt response and the chemical involved was not highly hazardous or corrosive, no serious injuries were sustained.

Root Causes Identified

- Failure to wear appropriate PPE (lab coat, safety glasses, chemical-resistant gloves)
- Fume hood sash raised beyond the safe working height
- Attempting to handle an overheated experiment without adequate protection

Lessons Learned

The consequences of this incident could have been significantly reduced, or avoided entirely, if established laboratory safety rules had been strictly followed. Working without PPE and the use of a fume hood outside its safe operating conditions substantially increases the risk of chemical exposure and injury.

Responsibilities

Departments and Principal Investigators (PIs) are responsible for:

- Ensuring all students and staff are adequately trained in laboratory safety
- Enforcing strict compliance with laboratory safety rules and procedures
- Conducting regular safety checks and reinforcing safe working practices

Required Preventive Measures

All researchers must:

- Always wear appropriate PPE, including:
  - Lab coat
  - Safety glasses or face protection
  - Chemical-resistant gloves
  - Long pants
  - Closed-toed shoes
- Ensure fume hood sashes are kept **at or below the safe working height (≤ 500 mm)** during operation
- Never attempt to adjust or intervene in a hazardous situation without proper protection
- Familiarize themselves with emergency response equipment and procedures

Conclusion

This incident serves as an important reminder that adherence to laboratory safety rules is essential for preventing injuries. All laboratory users share responsibility for maintaining a safe working environment.

Reference

- Chapter 3: Emergency Procedures; HKUST Safety and Environmental Protection Manual
- Chapter 7: General Laboratory Safety, HKUST Safety and Environmental Protection Manual
- Recent Incidents Highlight Risks of Skipping Safety Glasses; May 2025: Safety Alert
- Safety Poster "Proper Use of Fume Hoods"; HSEO
- Safety Poster "Key Steps for Responding to a Hazardous Chemical Spill"; HSEO
- Safety Poster "Lab Safety Reminders"; HSEO
- Safety Poster "Safe Lab Attire"; HSEO
- Safety Video "Laboratory Safety Shower Training: Safety Showers and Eye Wash Stations"; HSEO