

Laboratory Environmental Protection and Safety Procedure (EASR-Aligned)

1. Purpose

This procedure outlines requirements for the safe handling, storage, use, and disposal of hazardous materials in laboratories, ensuring compliance with relevant legislation including Ontario Regulation 1/17 (Environmental Activity and Sector Registry – EASR).

Detailed information is available in the University's Lab Safety Manual and/or Lab Safety Training.

2. Scope

This procedure applies to all personnel working in laboratory facilities where hazardous materials are used, stored, or generated. It will be provided to laboratory supervisors within buildings registered under an EASR to ensure ongoing regulatory compliance.

3. Responsibilities

Laboratory Supervisors:

- Conduct and maintain hazard assessments
- Ensure completion of department and lab specific training
- Ensure laboratory personnel are aware of and comply with this procedure and applicable legislation
- Maintain chemical inventories for their labs
- Review applicable maximum usage quantities (Appendix A) and implement procedures to align with these restrictions where applicable, including maintenance of a restricted chemical usage log.

Laboratory Personnel:

- Follow established procedures and safe work practices
- Complete the Restricted Chemical Usage Log for all chemicals subject to usage restrictions
- Complete required training
- Promptly report incidents, spills, and unsafe conditions

Health Safety and Wellness (HSW):

- Provide general training and awareness,
- Conduct inspections and audits
- Lead or support incident investigations

4. Fume Hood

Fume hoods must be used when working with volatile chemicals. Face velocity must be maintained between 80–120 FPM (or 40–80 FPM for low-flow hoods). The sash height should normally not exceed 45 cm while the hood is in use. Verification of face velocities and fume hood alarms is completed annually.

5. Chemical Use and Storage

- Procure and store minimal quantities necessary for work.
- Ensure chemical containers are compatible, intact, and clearly labeled.
- Segregate chemicals by hazard class.
- Store flammable chemicals in approved cabinets meeting ULC/NFPA standards.
- Keep containers closed when not in use.

6. Chemicals with Restricted Usage

Chemicals subject to restricted usage, along with their associated maximum usage values, are identified in Appendix A. Maximum usage values are not to be exceeded.

Restricted-use chemicals must be stored in minimal quantities, and where feasible, in quantities less than the restricted usage threshold values.

Handling of quantities approaching or exceeding the noted thresholds is to be done in a manner that minimizes emissions and ensures adherence to the maximum usage limits. This may include items such as the following:

- use of equipment for decanting (e.g. solvent pumps, pipettes)
- use of closed or filtered systems
- neutralizing, condensing or otherwise trapping vapours
- substituting for a chemical with no usage restriction

All users working with chemicals subject to restrictions are to record their usage in the **Restricted Chemical Usage Log**.

The log serves as a record of restricted chemical usage, allowing verification that these chemicals remain below applicable maximum usage thresholds and are managed in accordance with regulatory requirements. The Restricted Chemical Usage Log will be reviewed as part of the chemical inventory review process outlined in section 8.

Users are required to record all use of restricted chemicals. If a new restricted chemical is entered into the lab specific chemical inventory, lab users must add the chemical to the log and document the usage accordingly.

The Restricted Chemical Usage Log must be maintained in a manner that is accessible to all authorized users of the restricted chemicals in the particular lab. The log is to be maintained in an audit ready format at all times and be available for inspection upon request. An example log with the required information is included below:

Restricted Chemical Usage Log

PI Name:

Building Name/Number and Room Number:

Fume Hood Number (if more than one fume hood is present in the room):

Chemical Name	CAS #	Quantity Used	Date and Time	Spill Occurred Y/N	Comments

7. Hazardous Waste Management

Hazardous waste is to be managed as per University procedures in accordance with applicable regulatory requirements. This includes proper labeling, segregation, and timely disposal.

8. Chemical Inventory

Lab supervisors must maintain up-to-date chemical inventories in the University's chemical inventory system (HECHMET). This supports emergency response, Safety Data Sheet (SDS) access, regulatory reporting, and compliance.

Chemicals within laboratories will be audited against the inventory by HSW on a periodic basis.

Annually, HSW will review the actual chemical inventories of the building(s) for chemicals with restricted usage limits and compare them against the list with restricted-use chemicals using CAS numbers. For compliance verification HSW will communicate the results of this analysis to the applicable departments, identifying laboratories that contain restricted-use chemicals and specific chemicals in their inventory.

9. Chemical Spills

Prevent spills by using appropriate containment and proper safe handling practices. Labs must maintain spill kits containing absorbents, personal protective equipment (PPE), and tools. Incidental spill response procedures are addressed in the University's Lab Safety Manual.

10. Training and Orientation

Lab personnel must complete Lab Safety training prior to commencing work. Personnel must be trained on:

- Hazards specific to their work
- Emergency procedures
- Locations and proper use of equipment, including eyewash stations, showers, fire extinguishers, exits, and spill kits.

11. Incident Reporting

All incidents must be reported as per University incident reporting procedures.

12. Records and Documentation

Departments and laboratories must maintain records related to:

- Departmental or lab-specific training
- Inspections and audits
- Incidents and investigations
- Chemical inventory
- Hazardous waste disposal