



SAFE TRANSPORTATION OF HAZARDOUS MATERIALS PROCEDURE

INTRODUCTION

Hazardous Materials are biological, chemical, or radioactive substances that may cause harm or an adverse effect on human or animal health, or the environment. Hazardous materials are utilized in many areas at the University of Lethbridge may be present in different physical states such as a solid, a liquid or a compressed gas.

While the use and storage of hazardous materials within work environments (laboratories and storage rooms, maintenance and mechanical rooms, workshops, Printing Services, etc.) is well regulated, movement of these materials within buildings or by vehicle is a concern. Hazardous material releases may occur as a result of improper transportation.

PURPOSE

This procedure enables University personnel to move hazardous materials safely and comply with all applicable regulations. It outlines specific procedures as well as training and record-keeping requirements for:

- moving hazardous materials within buildings,
- preparing hazardous materials for shipment and/or transport by vehicle for off campus activities.

SCOPE

The **Safe Transportation of Hazardous Materials Procedure** must be followed by University of Lethbridge personnel who:

- receive and sign for packages of hazardous materials or dangerous goods
- loads or unloads commercial shipments of hazardous materials
- prepares packages of hazardous materials for shipment on a commercial carrier
- moves hazardous materials on campus or off by cart or vehicle

RESPONSIBILITIES

Managers/supervisors are responsible for:

- Identifying and obtaining all necessary shipping supplies
- Maintaining records of employees who require specific training for movement of hazardous materials

- Completing hazard assessments, including movement and transportation of hazardous materials and appropriate hazard controls, if applicable, and communicating this information with all affected employees within their department.

Employees are responsible for:

- Completing all required training for all applicable hazardous materials functions
- Complying with all aspects of **Safe Transportation of Hazardous Materials Procedure**

Campus Safety is responsible for:

- Developing and maintaining the **Safe Transportation of Hazardous Materials Procedure**.
- Serving as a technical resource, including training courses or referrals to vendor training as required.

TRAINING

- University personnel that work with or in close proximity to hazardous materials must have **Workplace Hazardous Materials Information System (WHMIS) training**.
- University personnel that prepare hazardous materials for shipment or that transport hazardous materials by vehicle must have **Transportation of Dangerous Goods (TDG) training**. Contact [Safety Services](#) for assistance with training providers.

RECORD KEEPING

- Chemical inventory records must be updated in Chematix to reflect changes for storage locations, transfers, and disposals.
- Transportation of Dangerous Goods shipping documentation must be kept for a minimum of 2 years.

PROCEDURE

MOVEMENT WITHIN BUILDINGS

1. Hazardous materials must be transported in sealed primary containers and placed in **secondary containment** to reduce potential for spills and/or exposures.
 - **Secondary containers** must be leak proof and large enough to contain the entire contents of the primary container, plus 10%.
 - A **cart with four solid sides** must be used to transport hazardous materials in their secondary containment.
 - All other containers such as autoclave or other bags which may contain hazardous materials must be transported on a cart and contained in a plastic tray to capture any leakage.

*** Note – The exterior of all containers must be decontaminated, prior to leaving the laboratory, so that gloves are not required.**

2. Gas cylinders must be transported on a **cylinder cart** with the cylinder capped and restrained.
3. A cart is required if the number or size of the transported containers exceeds what can safely be carried in one hand.
4. The **transport route** of hazardous materials is restricted to service corridors/elevators or those areas (hallways) less frequented by members of the general public. The shortest route is not necessarily the most appropriate.
5. Right of way on passenger elevators is given to passengers; right of way on freight elevators is given to freight and the transport of hazardous materials. Do not attempt to board an elevator containing passengers while transporting hazardous materials. Politely ask passengers to wait for the next available elevator if he/she attempts to enter the elevator while hazardous material transport is in progress.
6. Move cryogenic liquid (e.g. liquid nitrogen and helium) containers carefully.
 - Always use a hand truck, flat deck trolley, or other proper handling device and use a strap to secure the container.
 - Keep cryogenic liquid containers upright at all times except for the minor tilting on the cart during transport.
 - **Do not place a filled cryogen container in your vehicle.** Contact Shipping/Receiving at (403.329.2615) to arrange for transport of liquid nitrogen from Science Commons to other locations on campus.
 - If off campus transport is required, refer to **Transportation of Hazardous Materials by Vehicle** section below.
7. **If cryogenics liquids must be transported by elevator**, the first choice should be to move containers in a designated service elevator.

NOTE: Any potential elevator users at either sending or receiving floors must be warned to not utilize the elevator until the transfer is completed by signage and/or by label affixed to dewar inside elevator.

- The greatest risk of spillage occurs when moving the Dewar in or out of the elevator (e.g. the elevator does not stop level with the floor or if the transport cart wheel becomes lodged in the space between the elevator and the floor).
- Use extra caution when loading and unloading the elevator to prevent accidental spillage.
- Always enter the elevator last when loading a Dewar into the elevator; always exit the elevator first when unloading a Dewar from the elevator.
- **Use two persons to when transporting cryogen liquids by elevator.**
 - Pre-label the dewar to alert passersby and elevator users that the dewar/container is in transit.

- Safely transport dewar to sending floor, and ensure the necessary transit labels are affixed to the dewar and sign affixed to elevator call button. Dispatch the 2nd party to the sending floor and affix signage to elevator call button (or placing a tent sign in front of the elevator call button) at the receiving floor.
 - Call the elevator and safely stage the labeled dewar onto the elevator. Send the elevator to the receiving floor, and move via stairs or separate elevator to the receiving floor.
 - Once the dewar has arrived at the receiving floor, receiving party removes it from the elevator and removes the affixed signage (or tent sign) from elevator call button. Signage must also be removed from the sending floor, and verify elevator is operational for service.
 - Signage for dewars and elevators available from Central Stores.
- Further information is available in the UofL Cryogen Safety Manual.
8. Transport of hazardous materials that must go through publicly accessible areas may only occur when there is a minimum of public present (i.e. no transport during class change times or in a full elevator).
9. **The movement of hazardous materials is prohibited in the following areas:**
- Food and beverage consumption areas
 - Recreational facilities
 - Washrooms
 - Meeting rooms
 - Carpeted areas
 - Common areas accessible or used as a gathering location by the public
 - Personal and administrative offices

TRANSPORTATION OF HAZARDOUS MATERIALS BY VEHICLE

1. All hazardous materials transported by vehicle on a public roadway are subject to **Transportation of Dangerous Goods (TDG) Regulations**. Materials Management staff (403.329.2615) are certified for transportation of dangerous goods and can safely move chemical containers and Dewars between buildings.
2. Anyone that packages and or ships hazardous materials for vehicle transport must have **TDG training**.
3. Packages of hazardous materials must be accompanied by **shipping documents** and must have appropriate TDG labels applied, as per TDG regulations.
4. Refer to the information in item 6 in the previous section above if **transporting cryogens**.

Contact [Safety Services](#) for more information on transportation of chemicals within or between campus buildings and for off campus activities (TDG requirements).

REFERENCES

[Transport Canada, Transportation of Dangerous Goods Regulations](#)

[University of Lethbridge, Lab Chemical Safety Manual](#)

[University of Lethbridge, Cryogen Safety Manual](#)

[University of Calgary, Movement of Hazardous Materials within Buildings](#)

[Indiana University, Hazardous Materials Transportation](#)