

## McMaster University Requirements for Transporting Chemicals

### Transporting Chemicals for Demos, Lectures, or Similar Activities

The following **CANNOT** be transported by personal vehicles:

- **Explosives (e.g.: picric acid, perchloric acid, white phosphorus, pyrotechnic substances)**
- **Self-reactive chemicals (e.g.: hydrazine, azide compounds)**
- **Toxic gases and chemicals that are poisonous if inhaled**
- **[Hazardous waste](#)**
- **>20L cryogens**

**Your supervisor/Chair MUST be informed and approve any plans to transport chemicals on (building to building) or off campus.**

1. Avoid transporting chemicals if possible – ask the hosting venue to supply chemicals or have them delivered to the location when ordering.
2. Always have an inventory of the chemicals being transported – use the proper chemical names such that SDS's can be generated.
3. Place chemicals in plastic totes or Rubbermaid-like containers for secondary containment and to keep out of sight. Chemicals must have caps or stoppers to prevent spills or leaks and should have packing materials around them within the totes to prevent bottles from colliding with each other and breaking.
4. Always lock the vehicle when chemicals are being left inside – do not leave them for lengths of time if the materials are temperature sensitive.
5. Only transport the quantities needed and avoid excessive amounts. Do not transport more than 20L or 20kg of a chemical class at any one time. (Example: 4L of acetone, 4L of methanol and 4L of acetonitrile < 20L total of flammable liquids)
6. Air or water sensitive materials should be kept under 30mL or 30mg and in dry, sealed containers within secondary containment (a plastic bin or container).
7. All materials should have proper WHMIS labeling especially if the original bottle is not being used.
8. Put chemicals in totes by hazard class, not experiment. Put all acids in one, bases in another, flammables in a third etc. This will help to ensure compatibility and avoid the potential for dangerous reactions.

9. Cryogenics under 20L in volume should be transported in **proper dewars designed for this purpose**. Ensure proper ventilation in the vehicle (i.e.: secure in bed of open pickup truck; all windows open in a car, etc.) and secure the dewars in an upright manner such that tipping is not possible.
10. Do not delegate the loading or unloading of chemicals to a volunteer or helper who is unfamiliar with the hazards. All individuals handling chemicals must have appropriate training.
11. Spill kits for each liquid class being used should be transported with the chemicals to the destination should a spill occur while in transport or at the location of the lecture etc.

## Relocation of Labs to Other Buildings or Researchers to Other Universities

### Between Labs On or Off Campus

1. The contents of labs including chemicals should be packed by knowledgeable individuals with care to classify, wrap, and pack and label in suitable containers (boxes, totes, etc.).
2. Chemicals should be packed according to compatibility and not alphabetically.
3. Non-hazardous (mainly solids and non-reactive, non-flammable liquids) can be safely transported using secondary containment by Facility Services moving staff.
4. All hazardous (toxic, reactive, flammable, etc.) chemicals and gases should be moved by a hazardous chemical handling company such as RPR Environmental. Arrangements can be made for transport through UHS or FHSSO.
5. Spill kits must be available should anything spill on route.
6. Refrigerated compartments or insulated containers may be necessary for vehicles transporting fridge and freezer contents.
7. Do Not transport hazardous chemicals by carrying or cart across the campus – place a work order with Facility Services to transport hazardous chemicals to your lab.

### Shipping to off-site Institutions or Other Organizations

1. Avoid transporting chemicals to off-site institutions or other organizations by any means.

2. If absolutely necessary, contact a hazardous chemical carrier such as RPR Environmental to arrange transportation to the location. Do Not use regular moving companies. Arrangements can be made through UHS or FHSSO.
3. Do not transport chemicals to new locations personally or by rented trucks. Exemptions for the transportation of dangerous goods are limited to specific chemicals, very small amounts of these chemicals, and very few gases.
4. Most personal vehicle insurers will not ensure cars transporting dangerous chemicals due to the risk of endangerment of the driver and passengers due to inhalation of vapours, powders, and gases. Additionally, there is a risk of contamination of the vehicle and potentially the environment in the case of an accident.

For questions or advice on the movement of chemicals on or off campus, please contact UHS or FHSSO.

University Health & Safety

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