



# Safety Instruction

## Guidelines for Transporting Chemicals

### GUIDELINES FOR TRANSPORTING HAZARDOUS MATERIALS/CHEMICALS

Transporting chemicals can be one of the riskiest procedures carried out, because at no other time is accidental release and exposure more likely. However, by using the same care and caution before and during transportation that one would for any experimental procedure, danger to oneself, others, and the environment can be minimized.

**Note:** This document does not apply to the relocation/movement of laboratories on or between OSU campuses, nor the relocation or movement of hazardous waste, self-reactive hazardous materials, poisonous by inhalation materials, Biological Substance Category A materials or radioactive materials.

### DEFINITIONS

Hazardous Material: any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

### RESPONSIBILITIES

Individuals who transport hazardous materials on and off campus should know the following:

- Emergency contact information;
- Knowledge of the hazards of the materials being transported;
- Knowledge of how to clean up a spill of the hazardous material;
- Packaging requirements for the hazardous materials being transported.

### TRAINING

The following training is recommended prior to transporting hazardous materials:

- Safety Data Sheets and Hazard Communication
- Laboratory Safety
- OSU Driver Authorization (if transporting chemicals off campus in an OSU owned vehicle)

### LIABILITY, INSURANCE COVERAGE AND USE OF PERSONAL VEHICLES

Use of University Vehicle:

- It is strongly recommended hazardous materials be transported in a university-owned vehicle.
- If a university-owned vehicle is used to transport hazardous materials, according to this policy, an at-fault auto accident would be covered by the university's vehicle insurance policy.

Use of Personal Vehicle

- If a personal vehicle is used to transport hazardous material and an at-fault auto accident occurs, the employee's personal auto insurance covers the damage up to the limits of their insurance policy then the university's vehicle insurance policy should cover expenses on an excess basis. The employee's supervisor must authorize the use of a personal vehicle for this work duty.
- If using a personally owned vehicle, consultation should be made with one's insurance carrier to ensure coverage applies when driving on university business and carrying materials of trade. The employee's automobile liability policy is primary, and any applicable automobile liability insurance deductibles would be paid by the employee.

### SPILLS AND EMERGENCY CONTACT

If properly packaged and secured, a spill should not occur during transportation. However, in the event of a spill:

- Call OSU EH&S immediately at 541-737-2273 during business hours; after hours, call Public Safety at 541-737-3010.
- Call your supervisor.

### GUIDELINES FOR TRANSPORTING HAZARDOUS MATERIALS

- Individuals transporting chemicals must be familiar with the material's hazards and know what to do in the event

of a release or spill. Safety Data Sheets (SDSs) are a good source for this information.

- Employees transferring hazardous materials must have proper lab-safety training, including spill-response training.
- Containers being transferred must be fully capped and labeled properly according to EH&S's labeling requirements.
- Materials that are unstable, explosive, or extremely or acutely hazardous should not be moved without first contacting EH&S Hazardous Materials group.
- Hazardous materials must be attended at all times while being transported.
- Incompatible chemicals must be kept separated during transport.
- Hazardous materials should not be transported in the passenger compartment of the vehicle. They should be kept in the trunk of a passenger vehicle or the bed of a truck.
- Transport of hazardous materials using bicycles or mopeds or on the shuttle bus system or other modes of public transit is strictly prohibited.
- A spill kit must be kept in the vehicle suitable for cleaning up the materials that are being transported. In general, this would consist of personal protective equipment (e.g. gloves, eye protection), absorbent materials, and plastic bags to contain clean-up debris. If refrigerant is used during the transport, then the operator should have a pair of cryogenic gloves available in the vehicle.
- Materials must be in a secondary containment that is properly secured, properly vented, and enclosed with enough absorbent material to absorb all of the liquid.
- Recommendations of maximum quantity allowed when transporting hazardous materials off campus per hazards class is noted in Table 1 and should be referred to when transporting hazardous materials off campus.

### ON CAMPUS

- This section applies to anyone who needs to move chemicals or hazardous materials from one location on campus to another location on campus. The following procedures are required for intra-building and inter-building moves: A cart with a containment lip or tote (see Figure for an example for liquid chemicals) is required for transferring materials.
- Avoid stairs during transfer. If transporting a highly hazardous chemical with airborne hazards, use an elevator alone and inform occupants that you are transporting a potentially hazardous material in the elevator. Ask would-be occupants to refrain from entering until after you have exited.
- PPE use:
  - a. A lab coat should be worn to transfer chemicals between labs.
  - b. Transfer must be made directly from one lab to another without any stops, including a restroom stop.
  - c. Safety glasses are recommended.
  - d. Glove use is discouraged during transfer. If gloves must be worn for safety, then gloves must be removed before touching door handles or elevator buttons. After use, gloves must be disposed of in a laboratory trash can rather than a non-lab trash can. When transferring chemicals between one building to another, be sure to keep carts on paved surfaces such as sidewalks with low vehicular and pedestrian traffic whenever feasible. Do not push carts through grass, gravel, mulch, or other unstable surfaces. Do not push carts up or down steep slopes.



### OFF-CAMPUS

This section applies to anyone who moves hazardous materials from OSU Corvallis Campus to another location off-campus or from an off-campus location to OSU Corvallis Campus.

### PACKAGING AND MARKING REQUIREMENTS

#### Chemicals

- Packaging must be either the manufacturer's original package or a package of equal or greater strength and integrity.
- Packaging must be leak proof for liquids and gases and sift-proof for solids.
- Packages must be securely closed, secured against movement, and protected against damage.

#### Hazardous materials used as a refrigerant for specimens:

- A receptacle containing dry ice, shall not be sealed to allow for the release of carbon dioxide gas.
- The package must be marked "Dry Ice" or "Liquid Nitrogen."
- The least amount of refrigerant necessary to maintain the integrity of the materials should be used during

transport.

**Biological samples**

- Use primary containers designed to contain the material to be stored.
- Use a leak-proof, secondary containment with absorbent material (i.e. paper towels) if biological material is liquid or may release liquids.
- Label all secondary containers with a brief description of the contents. Containers used for transporting blood specimens (regardless of source) should be additionally labeled with the biohazard symbol. Likewise, specimens known or suspected to contain a pathogen (affecting humans or animals) should also be additionally labeled with the biohazard symbol.
- Store and secure the transport container in a location in the vehicle whereby if an accident were to occur, the container or its contents will not be an exposure risk to the occupants of the vehicle or the environment.

**Table 1. Recommended Maximum Quantity Allowed for Transporting Hazardous Materials Off Campus.**

<u>Hazard</u>	<u>DOT Class</u>	<u>Recommended Maximum Quantity allowed for transport at one time</u>	<u>Examples</u>
<u>Flammable and Combustible liquid</u>	<u>Class 3</u>	<u>Limit 8 gallons/ 65 lbs.</u>	<u>Solvents, Click to see the list</u>
<u>Flammable Solids</u>	<u>Class 4, Division 4.1</u>	<u>Limit 8 gallons/ 65 lbs.</u>	<u>Charcoal, Click to see the list</u>
<u>Spontaneously combustible</u>	<u>Class 4, Division 4.3</u>	<u>Limit 1 oz.</u>	<u>Test kits, Click to see list</u>
<u>Oxidizer</u>	<u>Class 5, Division 5.1</u>	<u>Limit 8 gallons/ 65 lbs.</u>	<u>Bleaching compounds, Click to see the list</u>
<u>Toxic Material</u>	<u>Class 6, Division 6.1</u>	<u>Limit 8 gallons/ 65 lbs.</u>	<u>Pesticides Click to see the list</u>
<u>Biological Substance Category B</u>	<u>Class 6, Division 6.2</u>	<u>Total package &lt;8.8 lbs./4 L</u>	<u>Salmonella, Diagnostic Specimens</u>
<u>Regulated Medical Waste – Not Category A</u>	<u>Class 6, Division 6.2</u>	<u>Total package &lt;35.2 lbs./16 L</u>	<u>Sharps Containers</u>
<u>Corrosive Material</u>	<u>Class 8</u>	<u>Limit 8 gallons/ 65 lbs.</u>	<u>Acids and Bases, Click to see the list</u>
<u>Miscellaneous</u>	<u>Class 9</u>	<u>Limit 8 gallons/ 65 lbs.</u>	<u>Dry Ice, batteries, Click to see the List</u>

