

Transporting Biohazards

University of Tennessee Safety Procedure LS-BIO-009

Document Contact: Laboratory Safety Services

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Purpose

Transport of biological agents outside of the lab requires lab personnel to take precautions to ensure that lost samples and/or spills in public areas do not occur and that shipping regulations are observed. The purpose of this document is to provide guidance and expected best practices of UTK researchers for the transportation of biological hazards within and between UTK-area buildings and to provide general information for the shipment of biological hazards from UTK.

Scope and Applicability

The biological hazards transportation practices outlined in this document apply to the transportation of biological hazards within and off campus by all UTK-area researchers and laboratory workers.

Definitions and Abbreviations

Definitions

Primary container: a device or container which is in direct contact with a hazardous material and is designed to confine the substance and prevent leaks and spills.

Secondary container: a device or container which can contain hazardous material in case primary containment fails. Secondary containers should provide enough capacity to contain the entire volume of the primary container(s).

Abbreviations

CDC: Centers for Disease Control and Prevention

USDA APHIS: United States Department of Agriculture- Animal and Plant Health Inspection Service

US FWS: United States Fish and Wildlife Service

US DOC: United States Department of Commerce

UTK: University of Tennessee, Knoxville

Procedures and Best Practices

Transporting biohazards within a building

- Use primary containers that are manufactured to contain the material inside and equipped with lids, or tight-fitting stoppers to prevent spills.
- When transporting multiple tubes, place them in a rack or other type of holder that will keep them from shifting or tipping during transport.

- Use a leak-resistant secondary container **with a securable lid** to contain any leaks or spills while moving through hallways; see **Figure 1**.



Figure 1: *Example of secondary transport container with a securable lid*

- Use a cart with secondary containment to transport large volumes of materials or when moving from floor to floor.
- Avoid contaminating common contact surfaces or non-lab areas. If wearing gloves is necessary, use one glove to hold materials while using a clean, ungloved hand for the manipulation of doorknobs, elevator buttons, etc.; see **Figure 2**.

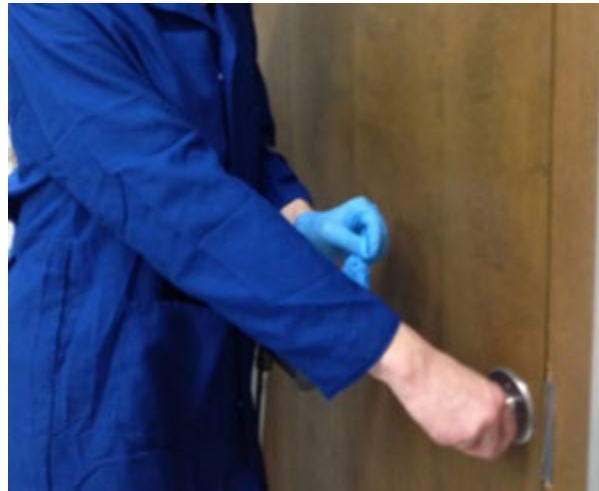


Figure 2: *Touch common surfaces with ungloved hand*

Transporting biohazards outside of a building

Follow the guidelines outlined above. Additionally:

- Secondary containers are **required** and must be leak proof and covered with lid/closure that latches into place.
- The secondary container must contain enough absorbent material (i.e. paper towels, bench pads) to absorb all liquids that could be released in the container.
- “Dead space” in the secondary container should be filled with shock absorbent packing materials (i.e., foam padding, air pillows, etc.) to prevent shifting of contents during transport.

- The outer surface of secondary container must be clearly labeled with contact information and a brief description of contents. A biohazard symbol is required if transporting infectious agents or human derived materials; see **Figure 3**.



Figure 3: Secondary container labeled with the biohazard symbol

Transporting biohazards in a vehicle

If vehicle transport is necessary:

- Use a designated UTK vehicle if possible.
- Follow packaging as described above for transporting biohazards outside of buildings.
- Place containers in storage areas of vehicles. Tertiary containment is recommended, where tertiary containers are similarly configured as secondary containers.
- Situate containers to prevent shifting during transit.
- Do not take biohazardous agents on campus buses or public transportation; see **Figure 4**.



Figure 4: Never transport biohazards on public transportation

Before a Lab-Related Trip

- Contact EHS Biosafety before your trip for assistance getting your biological materials to the required destination in a safe manner that meets regulatory requirements.
- Do not attempt to take undeclared biological materials in carry-on or checked baggage on aircraft, trains, ships, or other means of public/commercial conveyance. Doing so may result in substantial civil and/or criminal penalties.

Commercial Transport of Biological Hazards

Shipment of biological agents by courier (i.e., FedEx or UPS) is permissible in most cases. However, commercial shipping is subject to federal and international regulations, and certain packaging and labeling guidelines apply.

Non-regulated items include:

- Low risk or non-infectious organisms or materials
- Sterilized, heat-killed or otherwise inactivated samples
- Patient samples from healthy individuals for routine testing.

Regulated items include:

- Cultures of infectious agents
- Human or animal specimens that likely harbor infectious agents
- Genetically modified organisms (in some cases)
- Biological toxins
- Any materials packaged on dry ice or with liquid nitrogen dry shippers

You cannot submit biohazards for commercial transport unless you have been trained and certified. Training is available from EHS Biosafety for labs that regularly ship materials. Contact EHS Biosafety at 865-974-5084 or utbiosafety@utk.edu for information and training.

Regulatory Permit Requirements

In some cases, transport and/or receipt of biological materials may require permits from U.S. regulatory agencies. Examples include, but may not be limited to the following:

- **CDC:** Import of infectious agents or disease vectors (arthropods, bats, human or non-human primate materials) that may affect human health
- **USDA APHIS:** Import *and* interstate movement of livestock/poultry pathogens; animal blood/tissues; plant pests, plant pathogens, & noxious weeds; foreign soils; genetically modified plants, plant pests, and/or plant pathogens
- **US FWS:** Import/export of biological materials obtained from wildlife, particularly those obtained from threatened or endangered species
- **US DOC:** Export of potentially infectious agents affecting humans, animals, or plants from the U.S.

Biological materials permits may take several weeks to months to obtain. Because federal agencies will not make exceptions for your particular research needs, **do not wait until the project is imminent to begin the process of obtaining a permit.**

Contact EHS Biosafety at 865-974-5084 or utbiosafety@utk.edu for assistance in determining any shipping and/or regulatory permitting requirements that may apply.

References

[SA0100 – Safety and Environmental Health Program](#)

[SA0700 – Safety and Environmental Health Responsibilities](#)

[7 CFR, Parts 300-399 \(USDA APHIS Plant Protection & Quarantine; Biotechnology Regulatory Services\)](#)

[9 CFR, Parts 1-199 \(Veterinary Services, Center for Veterinary Biologics\)](#)

[15 CFR, Part 774 \(US Department of Commerce, Commerce Control List\)](#)

[42 CFR, Part 71 \(CDC Import Permit Program\)](#)

[49 CFR Parts 171-180 – Hazardous Materials Regulations](#)

[IATA/ICAO Dangerous Goods Regulations](#)

[Biosafety in Microbiological and Biomedical Laboratories \(BMBL\)](#)

Appendices

None.

Disclaimer

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