

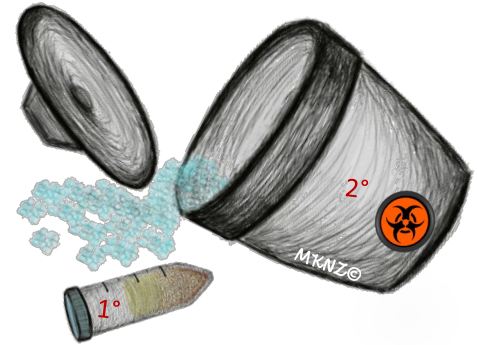


ENVIRONMENTAL HEALTH & SAFETY

SAFETY GUIDELINE

Secondary Containment for Transporting Biological Materials

Containment is the means of keeping hazardous materials isolated from persons and the environment. Conversely, **loss of containment** describes the escape or release of that material. **Primary (1°) containment** is the system, device, or control measure that is the *first line* of defense. **Secondary (2°) containment** is used to prevent loss of containment if the primary source of containment spills, breaks, leaks, or otherwise fails.



Securely sealed lids can prevent materials from being scattered across the floor, breaking, or getting lost.

The risk for loss of containment *increases* during the transport of biological material around or out of the laboratory.

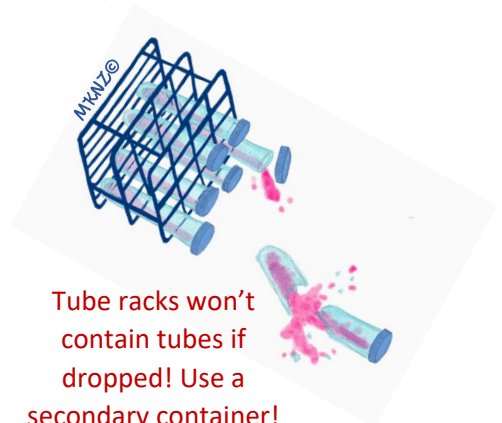
It is the responsibility of those handling biological materials to ensure sufficient containment controls are in place for procedures, storage, and transport of biological materials. **There is no knowing when an accident (drop, trip, fall, etc.) may happen, thus it is critical to use secondary containment when transporting biological materials.**

Following these guidelines will facilitate safe transport of biological materials outside of lab spaces.

→ Ensure that lids are securely closed in such a way that if it dropped, it would not come open. (Screw top>pop top, gasketed, latched, sufficiently taped/wrapped, etc.)

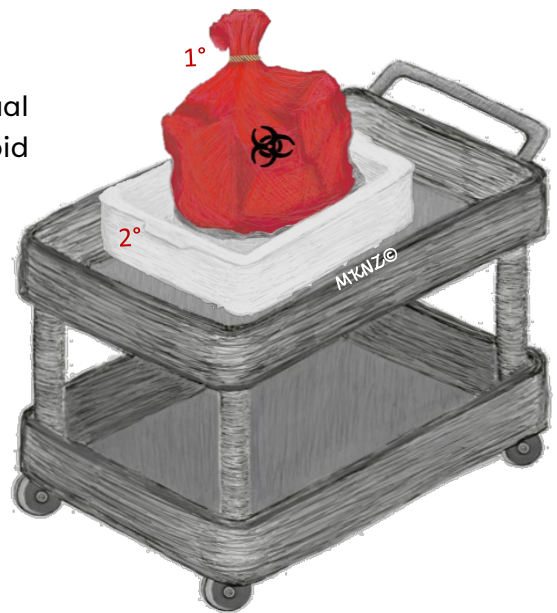
→ **Containers should be:**

- * Constructed from material sufficient for containing the hazard. (Glass, Styrofoam, Plastic, Metal, Rigidity, Transparency, Color, etc.)
- * Appropriately sized. (Never exceed 75% capacity)
- * Compatible with appropriate disinfection methods. (autoclave/steam sterilization or chemical decontamination)
- * Disinfected on outer surfaces before leaving laboratory spaces.
- * Labeled with Lab/Owner Information and hazard communication. (Biohazard Sticker, Toxic, Corrosive, Flammable, etc.)



Tube racks won't contain tubes if dropped! Use a secondary container!

→ **Be mindful of how far and in what spaces you will be transporting biological material.** Longer distances equal greater risk. Elevators present less risk than stairs. Avoid areas that are carpeted, high traffic, public, or places where food is consumed. **A cart is best for larger quantities, sizes, distances, and/or more severe hazards.**



Here the 1° bag is prone to holes and tears, and the 2° container is not completely sealed. Consider using a cart to minimize the risk of leaks or dropping that could happen during transport by hand.



→ **Consider if the container will need to maintain a specified temperature.** (wet/dry ice, RT, or heat)
For dry ice: Ensure there is adequate room for expansion and remember to loosen lids upon arrival.
For wet ice: Use a container that can be securely closed or place open ice bins within another secondary container that can be securely closed.

→ **If primary material is liquid, add absorbent material to the secondary container,** this will prevent leaks escaping from the container and make clean up easier. Ensure primary containers are sealed tightly before placing in secondary containers.

Conical tubes are great 2° containment for smaller tubes!



Baggies can also be 2° containment for smaller tubes. If a tube pops open in transport, the absorbent material can prevent leakage.



Shipping vessels often have O-rings which makes them great 2° containers!

This document and other Laboratory Safety Resources can be found at www.unmc.edu/ehs/safety/lab-safety/lab-safety-resources.html. Contact **Environmental Health and Safety** via phone (402-559-6356) or email (unmcehs@unmc.edu) for questions or assistance.