

3.14. Biological Waste Disposal Procedures

3.14.1. Biological Waste

All biological waste from BSL-1, BSL-2, and BSL-3 laboratories must be decontaminated prior to disposal.

If you do not have access to an autoclave or the autoclave is not functioning, contact IUEHS Biosafety for your respective campus for assistance arranging pick-up.

If the waste will be picked up by a contracted vendor, packaging requirements for that vendor must be followed which may differ from the packaging and labeling requirements outlined by IUEHS.

Decontamination and disposal are the responsibility of the person/laboratory generating the waste.

Collect disposable, solid materials contaminated by an infectious agent, **excluding sharps, or broken or unbroken glass**, into autoclave-proof bags (bag must have biohazard symbol and be clear or translucent and not red) within a sturdy container with biohazard symbol. When full, these bags are autoclaved, cooled, biohazard symbol defaced, put into plain opaque household trash bags, and then placed in the building's dumpster. Please refer to [Appendix B](#) for specific Indiana University waste guidelines.

Decontaminate liquids containing a biological agent by the addition of a chemical disinfectant such as sodium hypochlorite (household bleach) or an iodophor, **or** by autoclaving, then dispose of by pouring down the sink. It is not necessary (or advisable) to autoclave liquids that have been chemically disinfected.

Non-select agent biological toxins may be chemically treated or may require extended autoclave times for inactivation. See Appendix F for additional instruction on biological toxin inactivation.

3.14.2. Reusable Labware

Items such as culture flasks and centrifuge bottles are decontaminated by lab personnel before washing by one of two methods.

- Autoclave items that have been collected in an autoclavable container.
- Chemically disinfect items by soaking in diluted disinfectant for one hour before washing.

3.14.3. Disposal of Blood Products and Body Fluids

All human blood and other potentially infectious materials (OPIM) must be handled using Universal Precautions under BSL-2 biocontainment. Refer to [Appendix B](#) for Indiana University waste guidelines.

Discard disposable items contaminated with human blood or body fluids (**excluding sharps and glassware**) into autoclavable biohazard containers or bags. Material must be packaged and decontaminated as BL2 biohazardous waste, [refer to 3.14.1](#) or disposal procedures.

3.14.4. Disposal of Sharps and Disposable Glassware

Discard all needles, needle and syringe units, scalpels, and razor blades, **whether contaminated or not**, directly into rigid, labeled sharps containers (clear or translucent and not red). Do not recap, bend, remove or clip needles. Sharps containers must not be overfilled. Biohazardous sharps containers must be autoclaved as above.

Uncontaminated (no biological materials have been used) Pasteur pipettes and broken or unbroken glassware are discarded into containers specifically designed for broken glass disposal, or into heavy-duty cardboard boxes that are closeable. When boxes are full, tape closed and place in the building's dumpster.

Biologically Contaminated Pasteur pipettes and broken or unbroken glassware may be treated in one of two ways:

- Discarded into approved biological sharps containers, or

- Decontaminated by autoclaving or chemical disinfection, then discarded into glass disposal boxes or bins.

Biologically contaminated plastic sharps (including serological pipettes) may be packaged and treated in the following ways:

- An approved biological sharps container
 - To be autoclaved and disposed of as referenced above for glassware and other sharps waste.
- Decontaminated by chemical disinfection; either in a vertical or horizontal tray fully submerged in disinfectant.
 - Pipettes must be fully submerged in disinfectant for a minimum of 30 minutes.
 - Once fully decontaminated, the pipettes can be packaged as non-hazardous sharps waste and disposed of in the building dumpster.
- Rigid plastic tub with a lid that can withstand autoclaving
 - Tub must be large enough to fully enclose the pipettes and be lined with a biohazard bag to facilitate transfer of decontaminated pipettes to a box for non-hazardous sharps waste disposal.
 - Autoclave the tub with lid as described in section 3.14.1.
 - Once autoclaved, remove the bag and place into a cardboard box for non-hazardous sharps disposal.
- Placed in a lined cardboard box that can be fully closed
 - The box must be lined with a biohazard bag to ensure that any liquid biological material cannot leak onto the ground during collection.
 - Box must be closed, with bag open, before transport to the autoclave.
 - Box must be placed in an autoclaveable tray (plastic or metal) before autoclaving.
 - Autoclave as described in section 3.14.1.
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- Sharps that are contaminated with radioactive materials or hazardous chemicals must be discarded into separate sharps containers labeled with

the name of the isotope or chemical. Contact IUEHS Biosafety or Radiation Safety for your respective campus for disposal information.

3.14.5. Multi-hazard or Mixed Waste

Avoid generating mixed waste if possible. Keep volume to minimum.

Do not autoclave mixed waste, i.e., chemical waste combined with biological waste.

When discarding waste containing an infectious agent and radioactive material, inactivate the infectious agent first, then dispose as radioactive waste. Seek advice from the Radiation Safety Officer (RSO) for your respective campus before beginning inactivation procedures.

When discarding waste containing an infectious agent and a hazardous chemical, inactivate the infectious agent first, then dispose as chemical waste. Seek advice before beginning inactivation procedures. Contact IUEHS Biosafety for your respective campus for assistance.

3.14.6. Disposal of Animal Tissues and Carcasses

Disposal of animal carcasses/tissues is coordinated through the Animal Care Facility for your respective campus.

- Place animal carcasses/tissues into non-transparent bag. Double-bag when carcass contains zoonotic agent (transmissible from animals to humans).
- Place bag in freezer at Animal Care Facility or other designated location for your respective campus.
- Contact IUEHS for your campus with any questions.

Disposal of animal carcasses/tissues that are contaminated with radioactive materials requires special handling. Disposal instructions are available by contacting Radiation Safety for your respective campus.

3.14.7. Disposal Containers

Each laboratory is responsible for purchasing containers for the disposal of biological waste. The following types of containers are available:

3.14.7.1. Biological Sharps Containers

Sharps containers may be purchased from laboratory product distributors. They are available in various sizes, and must be puncture resistant, not red in color, labeled as "sharps," have a visible biohazard symbol, and have a tightly closing lid. Do not purchase "needle-cutter" devices, which may produce aerosols when used.

3.14.7.2. Hard plastic autoclave tub

Hard plastic autoclave tubs may be purchased from laboratory product distributors. They are available in various sizes. They must have a lid.

[Example of an acceptable autoclave tub:](#)



3.14.7.3. Pipette washers

Pipette washers can be used to chemically decontaminate serological pipettes. They can be purchased from laboratory product distributors and are available in various sizes.

Example of an acceptable [pipette washer](#) and [basket](#)



3.14.7.4. Cardboard box

Cardboard box must be closable and must be placed into an autoclave tub large enough to fit the entire box.

3.14.7.5. Biohazard Autoclave Bags

May be purchased from various laboratory product distributors, such as Fisher Scientific, VWR, and Baxter. Be sure to select polypropylene bags that are able to withstand autoclaving. Red biohazard autoclave bags are no longer permitted for laboratory use. They should be placed inside a rigid container with lid while waste is being collected. The rigid container must have the biohazard symbol.

3.14.7.6. Glass Disposal Boxes

May be purchased from various laboratory product distributors. Alternatively, heavy-duty, closeable cardboard boxes may be used for disposal of broken glass. They should be lined with a clear plastic bag and the bottoms reinforced with tape. Glass disposal boxes are only to be used for the disposal of non-biohazard glass.