**University of Minnesota**

**Biohazardous and Pathological Waste Management Plan**

**Revised April 2020**

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I. INTRODUCTION

The procedures described herein are to ensure that biohazardous, pathological, research animal and normal waste generated at the University of Minnesota is collected, stored, transported, and disposed of in such a manner as to minimize the risk of exposure to patients, staff, students, and the public. This plan is in accordance with Minnesota Statutes Chapter 116.76 – 116.82 of the *Infectious Waste Control Act*.

II. DEFINITIONS

**Biohazardous Waste**

“Biohazardous waste” means potentially hazardous biological materials that could cause harm to humans, animals, plants, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Biohazardous waste may include, but is not limited to, items containing the following material:

* Recombinant nucleic acids
* Synthetic nucleic acids
* Bacteria and viruses
* Parasitic pathogens
* Fungi
* Prions
* Biologically-derived toxins
* Human, non-human primate or other animal materials such as blood, tissues, body fluids, cell lines, etc.
* Animal pathogens
* Plant pathogens
* Research animal waste such as animal carcasses, animal bedding, animal cages, etc.

**NOTE:** Waste generated in research using recombinant or synthetic nucleic acids will be handled, stored, treated, and disposed of in the same manner as other comparable forms of biohazardous waste (i.e., contaminated solid or liquid waste, sharps, and animal waste).

**Decontamination**

“Decontamination” means rendering biohazardous material or waste safe for routine handling as solid waste.

**High Hazard Chemical, Low Molecular Weight Biologically-derived Toxin or Prion Waste Material**

“High Hazard Chemical, Low Molecular Weight Biologically-derived Toxin or Prion Waste Material” is any waste that contains **trace amounts** of prions, [group 1 carcinogens](https://dehs.umn.edu/sites/dehs.umn.edu/files/fs_chemotherapy_waste_dec_2018_joak_final.pdf), chemotherapeutic agents, low molecular weight biologically-derived toxins, or poisonous or toxic chemicals.

**Infectious Agent**

“Infectious agent” means any microorganism or biological material that is capable of producing harmful effects in humans, animals, plants, or the environment.

**Recombinant or synthetic nucleic acids**

Recombinant or synthetic nucleic acids are defined as:

(i) molecules that

a) are constructed by joining nucleic acid molecules and

b) that can replicate in a living cell, i.e., recombinant nucleic acids.

(ii) nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules, i.e., synthetic nucleic acids, or

(iii) molecules that result from the replication of those described in (i) or (ii) above.

**Biologically-derived Toxins**

Biological toxins (BT) are products derived from plants, animals, microorganisms (including, but not

limited to, bacteria, viruses, fungi, or protozoa), infectious substances, or recombinant or synthesized molecules.

**Normal Waste**

“Normal waste” is non-biohazardous and non-pathological material. This includes waste that has been properly decontaminated by an approved process (e.g., autoclaving, chemical disinfection, etc.) authorized by the Biological Safety Officer.

**Pathological Waste**

“Pathological waste” means human tissues, organs, and body parts that are intended for disposal. Pathological waste does not include teeth, hair, or nails.

**Human Body Fluids**

“Regulated human body fluids” means cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid that are in containers, or solid waste items that drip body fluid (i.e., bandages, dressings, etc.).

**Animal Waste**

“Animal waste” means tissue, carcasses, organs, and body parts from animals that require disposal. The waste may be generated from the natural expiration of the animal or as a result a surgical or medical procedure.

**Sharps**

A “sharp**”** means any contaminated object that can penetrate the skin, including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

**NOTE:** *Broken glass items that are not contaminated or potentially contaminated with biohazardous material can go into the regular broken glass disposal bins for recycling.*

III. BIOHAZARDOUS WASTE SEGREGATION, LABELING, AND BAGS/CONTAINERS

**NOTE:** *Waste generators are responsible for all handling of waste until after the waste is properly segregated, containerized, labeled, and if appropriate, decontaminated and placed in normal waste stream.*

A. Segregation and Labeling

1. Biohazardous waste, including sharps, will be segregated from normal waste, properly containerized, and labeled by the generator at the point of generation (e.g., laboratory, animal facility, patient exam room, etc.). Custodial staff will not collect waste that is not properly segregated, containerized, and labeled.

2 Biohazardous waste bags and sharps disposal containers will be handled in such a manner that containers will not break, spill, or otherwise cause contamination.

B. Bags/Containers for **On-Site** Decontamination

1. Biohazardous waste that will be decontaminated on site by autoclaving will be collected in clear autoclavable bags, *without* biohazard symbols.
2. The clear autoclavable bags will be contained in sturdy, leak-proof, outer containers that can be easily decontaminated. All biohazardous waste collection containers must have a lid that can be closed in such a way as to prevent spillage. Containers must be labeled as "Biohazardous" or display the universal biohazard symbol. Proper labeling of containers will ensure that waste intended for decontamination is not inadvertently discarded into the normal waste stream or removed by custodial staff before decontamination.
3. After decontamination by autoclaving, clear waste bags will be disposed of in the “normal waste” stream.

**NOTE:** *Red biohazard bags must not be used for autoclaving.*

C. Bags/Containers for **Off-Site** Biohazardous Waste Disposal**\***

1. Biohazardous waste that will *not* be autoclaved/decontaminated on-site will be collected in red biohazard bags marked with a biohazard symbol.
2. Outer collection containers will be sturdy and leak-proof with a lid that can be closed to prevent spillage and will be clearly labeled as “biohazard” or display a label with the universal biohazard symbol.
3. **Waste containers must weigh less than 50 pounds and must be secured with a lid or they will not be picked up.**
4. Solid Prion waste will be placed in yellow bins lined with yellow biohazard bags slated for incineration.
5. Waste that contains trace amounts of [high hazard chemicals, group 1 carcinogens, and chemotherapeutic agents](https://dehs.umn.edu/sites/dehs.umn.edu/files/fs_chemotherapy_waste_dec_2018_joak_final.pdf) must be disposed of in yellow bags/bins marked for incineration.
6. Waste that contains trace amounts of low molecular weight biologically-derived toxins must be disposed of in yellow bags/bins marked for incineration. Waste that contains trace amounts of proteinaceous biologically-derived toxins can be disposed of in a red biohazard bag or clear autoclavable bag. See [Biological Waste Disposal Template](https://bohd.umn.edu/sites/bohd.umn.edu/files/wastetemplate_1.doc) for a complete discussion of liquid and solid biologically-derived toxins disposal methods.

**\*See Appendix A** for additional information regarding **Off-Site** Disposal Options.

D. Biohazardous Sharps Containers

1. Biohazardous sharps disposal containers may *never* be placed in the normal waste stream. These sharps containers will be collected separately as “biohazardous sharps waste”.

2. Biohazardous sharps containers will not be used for any other purpose than sharps disposal.

3. Biohazardous sharps containers will be:

* Puncture resistant
* Clearly marked with a biohazard symbol
* Within easy reach of the work station
* Filled to no more than ¾ capacity
* Sealed and taped shut prior to transport

**NOTE:** *Needles are not to be recapped or removed from syringes prior to placing into sharps container unless doing so is part of an approved protocol.*

IV. PROCEDURES FOR DECONTAMINATING/HANDLING BIOHAZARDOUS WASTE

Waste generators are responsible for all handling of waste until after the waste is properly segregated, containerized, labeled, decontaminated and placed in normal waste stream or picked up by custodians for off-site waste disposal, as appropriate.

Biohazardous waste bags and sharps disposal containers will be handled in such a manner that containers will not break, spill, or otherwise cause contamination

Waste Bags must be picked up by the neck of the bag and held away from the body.

A. On-Site Decontamination of Biohazardous Waste

1. Solid biohazardous waste: Autoclaving of biohazardous waste will follow the procedures described in [the Autoclaving Biological Waste Fact Sheet](https://bohd.umn.edu/sites/bohd.umn.edu/files/autoclavebiowaste_sep_2019.pdf) posted on the University Health and Safety (UHS) web site. The autoclave’s effectiveness must be tested monthly. Monthly autoclave effectiveness test results must be recorded in an [Autoclave log](https://bohd.umn.edu/sites/bohd.umn.edu/files/autoclavelog-9.doc). Subsequent to decontamination, the waste can be handled as normal waste and discarded in the normal waste stream.

**NOTE:** *Any solid biohazardous waste decontamination method other than autoclaving for 60 minutes must be approved by the Biosafety Officer.*

2. [Liquid biohazardous waste](https://bohd.umn.edu/liquid-biohazardous-waste): Liquid waste will be autoclaved or chemically decontaminated following procedures described on the Biosafety Occupational Health website,. https://bohd.umn.edu/biohazardous-and-infectious-waste

B. Waste Handling for Off-Site Disposal

1. Waste generators will ensure that biohazard bags or bins are no more than **50 pounds or ¾ full**. Bags must be tied off and placed in a secondary containment tray and then placed in a designated laboratory area for pick-up. Bags *must not* be placed in hallways or other public areas.

2. “Burn Boxes” are not acceptable for storage or collection of biohazardous waste.

3. Custodians trained in biohazardous waste handling will transfer biohazard bags and sharps containers from laboratories to a designated biohazardous waste storage area for hauler pickup.

4. Biohazardous waste storage areas must be locked or located within secured access buildings to prevent unauthorized persons from entering. Storage areas must be prominently marked with the international biohazard symbol and with the words "Biohazardous Waste" on or adjacent to the exterior of entry doors and access gates.

5. Interior surfaces of storage areas must be constructed of materials that can be easily cleaned and disinfected.

C. Spill Cleanup and Accidental Exposures

1. For laboratory staff, spills must be cleaned and decontaminated as described in the [Biological Decontamination and Spill Cleanup Template](https://bohd.umn.edu/sites/bohd.umn.edu/files/decontaminationtemplate.doc). Custodians are trained on cleaning up biohazardous materials and must follow their SOPs.
2. If an employee is injured or experiences a potential exposure while handling biohazardous waste, they should seek medical attention immediately. Employees may seek treatment at the closest available medical facility or at their own healthcare provider. If possible, employees should seek treatment at the University provider, [HealthPartners](https://www.healthpartners.com/care/specialty/occupational-medicine/) Occupational and Environmental Medicine (M/F day time or Urgent Care after hours), or the nearest emergency room outside of normal hours. Follow-up care must be handled by HealthPartners Occupational and Environmental Medicine. Employees working in a coordinate campus may seek medical attention in the campus designated Occupational Health Clinic.
3. Spills from biohazardous waste bags or sharps disposal containers or employee contamination/injuries resulting from handling biohazardous waste or sharps will be reported to the employee’s supervisor. Information about worker’s compensation and filing a  [first report of injury](http://policy.umn.edu/Policies/hr/Benefits/WORKERSCOMP.html) is part of the University-wide administrative policy.

**NOTE:** *You must* [*report to the IBC*](http://www.research.umn.edu/ibc/report.html) *if the incident occurred while working on an IBC-approved protocol.*

D. Mixed Biohazardous/Radioactive Waste

**NOTE:** *Biohazardous radioactive waste is**radioactive.*

1. Solid Biohazardous/Radioactive Waste Disposal procedures:

* Solid biohazardous/radioactive waste containing short half-life (<90 days) radioisotopes (e.g., 32 P, 33P, 35S, 41Cr, 125I, etc.) willbe bagged separately and autoclaved prior to radioactive disposal. Once disinfection has been completed, autoclave bags will be placed into the appropriate solid radioactive waste container.
* Solid biohazardous/radioactive waste containing long half-life (>90 days) radioisotopes (e.g., 14C, 3H, 45Ca, etc.) will be placed in a long half-life radioactive waste container.
* Radioactive waste disposal will follow the appropriate steps outlined in the University’s [Department of Radiation Safety](https://radsafety.umn.edu/managing-radioactive-waste) webpage.

2. Liquid radioactive waste will be placed in a liquid handling container and labeled radioactive waste.

**NOTE:** ***BE SURE TO KEEP LIQUID RADIOIODINE LABELED COMPOUNDS SEPARATE FROM NON-RADIOIODINE LABELED COMPOUNDS.***

* Waste that does ***not*** include radioiodine will be disinfected with 1 part bleach to 9 parts liquid.
* Radioiodine liquid waste will be disinfected in 1 part phenol to 10 parts liquid.
* After disinfection, waste will be placed in a liquid radioactive waste disposal container Radioactive waste should comply with the guidance provided by the University’s [Radiation Safety Department](https://radsafety.umn.edu/managing-radioactive-waste) (e.g., keep radioiodine liquid waste separate from other radioactive liquid waste).

E. Animal Waste, Tissues, and Carcasses

1. On-Site processing via the [**Tissue Digester**](https://bohd.umn.edu/sites/bohd.umn.edu/files/animal_tissue_and_waste_fact_sheet_2018.pdf) **(Red Bins/Pink Digestible Bags)**

* Most animal tissues, organs, and carcasses can safely be processed in the tissue digester.
  + **NO** plastic, paper, gauze, bedding, tissue, towels, gloves, ear tags, medical devices, or implants are safe for digestion. Animal Tissue ONLY. Non-digestible biohazard waste should be red bagged or autoclaved on site.
  + **NO** animal tissues or carcasses that have been fixed through plastination or treated with high hazard chemicals and chemotherapy drugs. Dispose these carcasses in yellow bags/bins for incineration.
  + **NO** animal tissues or carcasses that have unrecoverable implants or medical devices.
* Remove any non-tissue items from the animal prior to disposal for digestion.
* Formalin fixed tissue is safe for digestion, as long as any excess liquid is collected and manifested through the UHS Hazardous Waste Program.
* Animal tissues and carcasses that may contain prion disease can go to the digester. The alkaline hydrolysis process will safely inactivate the prions.
* Animal waste must go in special digestible bags and be collected in the red biohazard bins. Bags are available through [UMarket](http://umarket.umn.edu/).
  + Small digestible bags (17 x 16) #GC20009
  + Large digestible bags (40 x 46) #GC20010
* Digestible bags will be collected in RAR areas or at your designated cooler location.
* Red bins must be tightly secured with a lid and weigh no more than **50 pounds**.
* Special arrangements can be made with the Veterinary Diagnostics Laboratory for large animals or direct drop off of large loads.

2. Off-site incineration of non-digestible tissues and carcasses (**Yellow Bags/Bins**)

* Animal carcasses and tissue that contain high hazard chemicals and/or [chemotherapeutic agents](https://dehs.umn.edu/node/129261/attachment) should go in the high hazard waste stream.
* Animal tissues, carcasses, or organs that have been preserved by plastination should be placed in yellow bags/bins for off-site incineration.
* Animal tissues, carcasses, or organs that contain unrecoverable implants or medical devices must be collected for off-site incineration in yellow bags/bin.
* Yellow bags will be collected in RAR areas or at a designated cooler location.
* Yellow bins must be tightly secured with a lid and weigh no more than **50 pounds.**
* [Contact FM](https://facilities.umn.edu/) for yellow bin delivery or pickup.

3. Training and Resources for Animal Waste handling

* Ask the area RAR supervisor about training for animal research waste
* Take training online [Biohazardous Waste Training](https://www.uhs.umn.edu/biological-and-infectious-waste) through UHS
* Review the [Disposal Options for Animal Tissues and Carcasses Fact Sheet](https://bohd.umn.edu/sites/bohd.umn.edu/files/animal_tissue_and_waste_fact_sheet_2018.pdf)
* [Poster for waste coolers and collection sites](https://bohd.umn.edu/sites/bohd.umn.edu/files/animal_waste_poster_loading_dock.pdf)

F. Procedures for Specific Areas or Departments

**NOTE:** *All of the above procedures for waste segregation, bags/containers/labels; the handling of biohazardous sharps, decontamination, and spill clean-up/accidental exposures will be followed. In addition, the following area-specific procedures will be followed.*

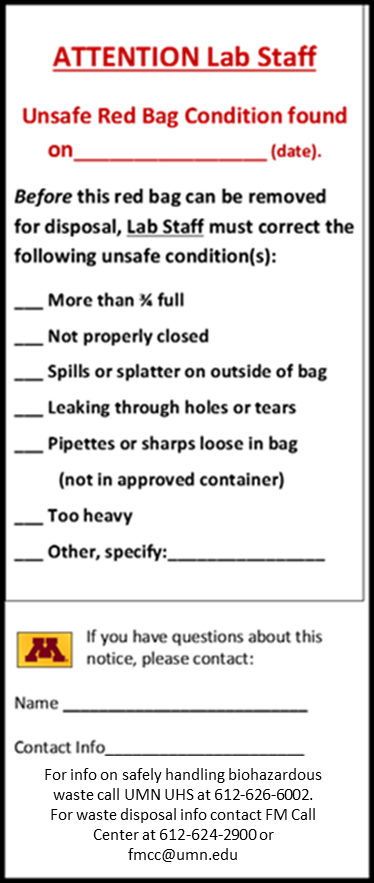
1. Out-patient Clinics

* All waste material contaminated with blood or other body fluids which drip freely from the material will be discarded in a red biohazard bag.
* A biohazardous waste collection container will be lined with a red biohazard bag (or yellow bag for chemotherapy agents or prions). Both collection containers and biohazard bags must be clearly labeled with the universal biohazard symbol or “Biohazard.”
* Laboratories working with infectious agents will either decontaminate all samples, cultures, stocks, and materials used in the manipulation of infectious agents before disposal into the normal waste stream or dispose of materials in a red biohazard bag.
* All blood bags will be handled as biohazardous waste even if they are empty or have been tested for infectious agents.
* Blood, serum, and blood components must be disposed of as biohazardous waste. Exceptions will be made for diagnostic labs that dispose of urine samples by sewer or dispose of sputum samples in the normal waste stream.
* Fluids must be kept within a leak-proof container or be decontaminated with an appropriate disinfectant.

2. Custodial Staff

* Biohazardous waste bags will be collected daily.
* Bags and sharps containers will be handled carefully to prevent breakage or spillage.
* Biohazardous waste may not be transferred from one bag to another bag.
* Bags will be closed securely prior to transportation.
* Bags will be grasped and lifted by the top and held away from the body to avoid potential contamination or injury to the handler.
* Biohazardous waste will not be compacted or mixed with other waste materials.
* Biohazardous waste bags and sharps containers will be placed directly into the proper transport cart for transfer to a biohazardous waste collection bin in the waste pick-up area.
* Bags and sharps containers will remain in the transport carts if a bin is not available.
* All transport carts must be cleaned and disinfected on a daily basis.
* The cart cleaning area will be kept neat and orderly. The floors will be cleaned and disinfected on a daily basis. Walls will be cleaned and disinfected when soiled.

**NOTE:** *Custodians should be instructed* ***not*** *to collect biohazardous waste that is improperly bagged, overfilled, leaking, etc. They should report the room number and observation to their supervisor and leave the waste behind for the generators to correct. Tags for labeling unsafe red bag conditions are available as well (see below).*



3. Biohazardous Waste Storage Areas

* Storage area access will be restricted to authorized personnel and have a pest control plan.
* Biohazardous waste will be removed from storage by the hauler for most locations. Some buildings that don’t routinely generate biohazardous waste may need to [contact FM](https://facilities.umn.edu/) to arrange for delivery and/or pickup of biohazardous waste bins as needed.
* At no time may waste be kept in storage areas for more than 4 days.
* Bins must not be stacked more than 2 high.
* All containers and equipment (e.g., refrigerators) used for storage shall be labeled with a biohazard sticker or the words “Biohazardous Waste” not less than one inch in height.

4. Biosafety Level 3 (BSL-3) Laboratories

All waste generated in BSL-3 laboratories is considered to be biohazardous. Please consult the [Biosafety Level 3 Program](http://www.ahc.umn.edu/bsl3/) for guidance on waste handling.

5. University of Minnesota Duluth (UMD)

Biohazardous waste handling specific to the Duluth campus can be found on UMD's [Environmental Health and Safety Web](http://www.d.umn.edu/ehso/) site.

V. PROCEDURES FOR HANDLING PATHOLOGICAL WASTE

All human pathological waste will be handled by the University’s [Bequest Program](http://www.bequest.umn.edu/). Material will be cremated by a crematory contractor and returned to the University for Final Disposition. The contractor must be a “final disposition service” provider with a human only crematory.

Fixed tissue will be removed from preservative before transfer to the Bequest Program. Chemical preservatives will be disposed of as [hazardous chemical waste](https://dehs.umn.edu/hazardous-waste-disposal-procedures).

The Bequest Program should be contacted at (612) 625-1111 with questions regarding delivery and storage procedures. Material storage will be in a locked walk-in freezer in a secure room that is accessible only to authorized Bequest Program individuals. Material will be transported to the crematory by the crematory contractor.

VI. NORMAL (NON-BIOHAZARDOUS) WASTE

Normal (non-biohazardous) waste presents a minimal health risk from communicable infectious agents. This generally consists of materials that either have not been in contact with infectious agents or have been properly decontaminated before disposal. The following procedures used to collect, handle, and dispose of normal waste promote general safety and sanitation conditions.

A. Accepted Material in Normal Waste Stream

* I.V. bags and tubing
* Urine bags and containers after contents have been emptied into the sanitary sewer
* Properly decontaminated biological waste

**NOTE:** *Non-contaminated broken glass and large sharp items will be placed in sturdy containers, such as a cardboard box lined with a plastic bag, prior to discarding in normal waste. Box will be sealed and labeled “Broken Glass.” Glass disposal bins should never exceed 50 pounds. They are available for purchase through* [*UMarket*](http://www.umarket.umn.edu/)*.*

B. Procedures for Handling Normal (Non-biohazardous) Waste

* Approved containers for the disposal of normal waste will be lined with plastic bags *other than* those designated for biohazardous waste. Approved containers for normal waste must *not* be red in color nor have a red biohazard symbol on them.
* All waste bags shall be handled carefully in a way that prevents injury to handlers and damage to the bags. Waste bags will be picked up by the neck of the bag and held away from the body. They should never be thrown or kicked.
* Normal waste may be emptied from one container into another. Cardboard boxes or other large packing materials may be transported on carts, without being contained in bags.
* Sturdy, leak-proof transport carts will be used to transport waste to the appropriate loading dock area. Elevators designated for freight or waste transport will be used between floors.
* Normal waste will be carefully placed into the compactor trucks at the loading dock.
* Transport carts will be cleaned and disinfected on a daily basis.
* If normal waste is stored prior to shipping, it must be kept in containers and located in an approved storage facility (i.e., a room or facility that prevents access to weather, unauthorized persons, and/or animals).
* Loading and storage areas will be properly maintained and cleaned.

VII. EXPOSURE CONTROL/RIGHT TO KNOW TRAINING

Exposure control training requirements apply to all employees that generate and/or handle biohazardous or pathological waste. Training will be provided on initial assignment of the employee to a task involving the generation or handling of biohazardous waste and refresher training as often as necessary to assure compliance.

A. Each training program will be appropriate in context and language for the work area and contain a minimum of the following elements:

* An explanation of the biohazardous waste management plan.
* Procedures to ensure the proper segregation of biohazardous and pathological waste from other solid waste, labeling, transportation, and storage of biohazardous waste.
* When appropriate, training will include Personal Protective Equipment (PPE) and decontamination procedures.
* Waste handling procedures to prevent waste spills and accidental exposures.
* Any policies and procedures applicable to the employee's assigned roles and responsibilities.

B. UHS provides links to the following biohazardous waste handling training tools:

* [Biological and Infectious Waste Training](https://www.uhs.umn.edu/biological-and-infectious-waste)
* [Biohazardous Waste Disposal Table](https://bohd.umn.edu/sites/bohd.umn.edu/files/biological_waste_disposal_table_2018_0.pdf)
* [Fact Sheet: Autoclaving Biological Waste](https://bohd.umn.edu/sites/bohd.umn.edu/files/autoclavebiowaste_sep_2019.pdf)
* [Biological Waste Disposal Template](https://bohd.umn.edu/sites/bohd.umn.edu/files/wastetemplate_1.doc)
* [Disposal Options for Animal Waste Fact Sheet](https://bohd.umn.edu/sites/bohd.umn.edu/files/animal_tissue_and_waste_fact_sheet_2018.pdf)
* [Poster for Animal Tissue and Carcass Waste Collection sites](https://bohd.umn.edu/sites/bohd.umn.edu/files/animal_waste_poster_loading_dock.pdf)
* [Preventing Employee Exposure to Bloodborne and Other Pathogens](https://www.uhs.umn.edu/bloodborne-pathogens-annual-osha-requirement-uhs110)

**NOTE:** *Training records must be maintained for three years from the date on which the training occurred. Training records must include the dates of the training sessions, the contents or a summary of the training session, the names and qualifications of persons conducting the training, and the name and job titles of all persons attending the training sessions.*

VIII. INCIDENT REPORTING

Any incident involving spillage of the contents of a biohazardous waste bag or sharps container will be reported to the employee's supervisor and the Biosafety and Occupational Health Department (612) 626-6002.

In addition, employees will be advised to seek medical care for any injury or potential exposure resulting from handling biohazardous waste and to report the incident according to [University Policy](http://www.policy.umn.edu/Policies/hr/Benefits/WORKERSCOMP.html). Within 24 hours of the employee’s notification, the supervisor shall complete the [First Report of Injury and the Employee Incident Report](http://policy.umn.edu/Policies/hr/Benefits/WORKERSCOMP.html) forms. Please see the Biosafety and Occupational Health website for information on [Clinical Services](https://bohd.umn.edu/clinical-services).

**NOTE:** *You must* [*report to the IBC*](http://www.research.umn.edu/ibc/report.html) *if incident occurred in an IBC-approved protocol.*

IX. OFF-SITE TRANSPORTATION, DISPOSAL, AND QUANTITY OF BIOHAZARDOUS WASTE

The University of Minnesota participates in the State of Minnesota's Biohazardous (Biomedical) Waste Disposal Contract for off-site transportation and disposal of biohazardous waste and animal carcasses. The hauler is registered with the Minnesota Pollution Control Agency. The current contract is held with Stericycle.

X. PLAN REVIEW AND CONTACT INFORMATION

A. The plan will be reviewed and updated at least every two years.

B. The Biohazardous Waste and Pathological Waste Management Plan is available to all University of Minnesota employees on the [Biosafety and Occupational Health website](https://bohd.umn.edu/sites/bohd.umn.edu/files/biohaz_waste_plan_2018_final.docx). Questions can be directed to UHS Biosafety at (612) 626-6002.

**Appendix A: Summary Table for Off-Site Disposal Options**

|  |  |  |
| --- | --- | --- |
| **Waste Containers** | **Type of Waste Collected** | **Preparation** |
| http://www.pocketnurse.com/images/03-78-8541.jpg  **Grey Bin Biohazardous Waste**  Picked up by outside contractor, autoclaved, and landfilled. | * Gloves, masks, & gowns * Plastic pipette tips * Disposable non-glass lab ware * Paper towels, pads, or tissues * Tubing * Animal bedding * Sharps containers * Waste containing trace amounts of proteinaceous biologically-derived toxins | * Bags must be tied off when ¾ full * Securely place the lid on the bin when full * Bins must not weigh more than 50 lbs. * Sharps containers must be sealed & taped up before placing in bags/bins |
| **NO:** Chemical waste of any kind, human or animal tissue, prions, or radioactive material in red bags/grey bins | | |
| http://www.a-solutionsinc.com/images/products/28gallon-red-small.jpg  **Red Bin Animal Tissue Waste**  Processed on the St. Paul campus using the Tissue Digester | * Animal tissue * Animal organs * Animal carcasses * Pink digestible bags * Formalin preserved tissue * Animal carcasses with prion disease | * Bags must be tied off when ¾ full * Securely place the lid on the bin when full * Bins must not weigh more than 50 lbs. |
| **NO:** Chemical waste of any kind, carcasses or tissues that have been treated with high hazard chemicals or chemotherapeutic agents, non-tissue waste, plastinated tissue, carcasses that contain unrecoverable implants or medical devices, bedding or sharps in digestible bags/red bins.  ***Note:*** *Human tissues and organs should be handled through the University’s Bequest Program. For information**you can visit their website at:* <http://www.bequest.umn.edu/>. | | |

|  |  |  |
| --- | --- | --- |
| **Waste Containers** | **Type of Waste Collected** | **Preparation** |
| http://www.biohazardwasteremoval.com/img/upload/chemo-waste-bags.jpg  **Yellow Bin High Hazard Waste**  Picked up by outside contractor & incinerated | Any item that contains trace amounts of **\*Chemotherapy Waste, Hazardous Drugs, Prions, or low molecular weight biologically-derived toxins:**   * Animal tissue, organs, & carcasses * Carcasses with unrecoverable implants or medical devices * Gloves, masks, & gowns * Plastic pipette tips * Disposable non-glass lab ware * Paper towels, pads, or tissues * Animal bedding * Sharps containers * Waste items that contain prions * Waste items that contain low molecular weight biologically-derived toxins | * Bags must be tied off when ¾ full * Securely place the lid on the bin when full * Bins must not weigh more than 50 lbs. * Sharps containers must be sealed & taped up before placing in bags/bins |
| **NO:** No liquid chemical waste of any kind in yellow bags/yellow bins. | | |

**\***[**Chemotherapy Waste and Hazardous Drugs**](https://dehs.umn.edu/sites/dehs.umn.edu/files/fs_chemotherapy_waste_dec_2018_joak_final.pdf)**:** Group 1 and 2A carcinogens, poisonous gases, toxic chemicals, neurotoxins, reproductive toxins, and chemotherapeutic drugs

* *Dermal Toxicity.* A material with an LD50 for acute dermal toxicity of not more than 1000 mg/kg.
* *Inhalation Toxicity.* A dust or mist with an LC50 of not more than 4 mg/L; or a LC50 for acute toxicity on inhalation of vapors of not more than 5000 mL/m3; or is an irritating material, with properties similar to tear gas, which causes extreme irritation. (E.g., Halothane, Acrylamide, Tamoxifen, Anhydrous ammonia, Chloramphenicol, Warfarin)
* *Oral Toxicity.* A liquid or solid with an LD50 for acute oral toxicity of not more than 300 mg/kg.