



Albert Einstein College of Medicine

Waste Disposal Policies and Procedures

Table of Contents

I. Purpose	3
II. Scope.....	3
III. Policy	3
III.A. Ordering	3
III.B. Ordinary Trash	3
III.C. Sharps.....	4
III.C.1. Sharps, Non-Infectious, Non-Contaminated	4
III.C.2. Sharps, Infectious Agents or Materials Including rDNA or Trace Chemicals*	5
III.D. Labware.....	5
III.D.1. , Non-Infectious, Non-Contaminated Labware	5
III.D.2. Plastic Labware, Infectious, Chemically Contaminated	6
III.E. Infectious Materials.....	6
III.F. Bottles and Containers	7
III.F.1. Bottles, Non-Infectious, Not Chemically Contaminated	7
III.F.2. Broken Glass/Bottles, Non-Infectious, Not Chemically Contaminated	7
III.F.3. Bottles, Chemically Contaminated	7
III.G. Chemicals.....	8
III.G.1. Chemicals, General	8
III.G.2. Chemical Consolidation, Non-Chlorinated Solvents	8
III.G.3. Trace Chemicals*	8
III.G.4. Photographic and Chemical Fixer Disposal.....	9
III.H. Animal Waste.....	9
III.H.1. Animals and Bedding, Infectious Agents or Materials Including rDNA.....	9
III.H.2. Animal Waste and Bedding, Non-Infectious	10
III.I. Radioactive Waste.....	11
III.I.1. Disposal of Mixed Radioactive Waste.....	11
III.I.2. Dry Solid, Radioactive Waste	11
III.I.3. Radioactive Waste - For Decay-in-Storage Within the Laboratory.....	12
III.I.4. Radioactive Waste - Liquid Scintillation Vials (LSV's)	13
III.I.5. Radioactive Waste - Sink Disposal of Liquids	14
III.I.6. Radioactive Waste - Disposal of Large Quantities of Liquid Waste	15
III.I.7. Radioactive Waste – Animal Carcasses/Animal Bedding	15
III.I.8. Radioactive Sharps.....	16
III.J. Universal Wastes.....	17
III.K. Computers and Electronics	18
III.L. Paint	18
III.L.1. Paint-Related Materials.....	18
III.M. PCB Waste	19
III.N. Disposal of Refrigeration Units	19

III.O. Contact Information	20
IV. Definitions	20
V. Effective Date	20
VI. Policy Management and Responsibilities	20
VII. Approved (or Revised)	20
Appendix A: Hazardous Waste Pick-Up Form.....	21
Appendix B: Hazardous Waste Label	22
Appendix C: Survey Record of Disposed Radioactive Waste from Decay in Storage.....	23
Appendix D: Chemical Waste Safety Bulletin	24

I. Purpose

Waste disposal is a complicated and expensive task subject to various local, state, and federal government regulations designed to ensure the proper management and disposal of wastes. The Albert Einstein college of Medicine (Einstein) manages the wastes generated in the campus following all applicable rules and regulations issued by the U.S Environmental Protection Agency (EPA), the National Institute of Health (NIH), the Centers for Disease Control and Prevention (CDC), the Occupational Safety and Health Administration (OSHA), the New York State Department of Environmental Conservation (NYSDEC), the New York City Department of Health and Mental Hygiene (NYCDOH), the New York City Department of Sanitation (DSNY), and the New York City Department of Environmental Protection (NYCDEP). Each agency has a myriad of rules and regulations covering different types of waste. The intent of these policies and procedures are to assist faculty, staff, and students in meeting the requirements of these regulations.

II. Scope

The Policy and the procedures outlined herein apply to all Einstein faculty, staff, and students.

III. Policy

III.A. Ordering

Researchers and/or Principal Investigators (PIs) should carefully evaluate the hazardous and non-hazardous raw materials needed to conduct the experiments, to minimize the number of materials ordered; therefore, minimizing the amount of hazardous waste generated. Excessive stocks of hazardous chemicals, radioactive materials, and infectious agents present storage, safety, and disposal challenges. EH&S encourage researchers and PIs to review literature for alternative, non-hazardous research protocols to help minimize the volume of hazardous material used and waste generated.

Waste minimization is a waste management approach that focuses on reducing the amount and toxicity of hazardous waste that is generated. In addition to hazardous waste regulated under RCRA the EPA encourages waste minimization techniques that focus on preventing waste from ever being created, (source reduction) and recycling. There are three general methods of waste minimization: source reduction, recycling, and treatment. Einstein requires faculty, Staff, and students' assistance in the implementation of these Waste Disposal Policies and Procedures.

III.B. Ordinary Trash

Examples of ordinary trash include:

- Paper products
- Product wrappers and packaging
- Cardboard containers

Sort into recycling receptacles according to recycling law for:

- Cardboard
- Newspaper

- Magazines
- High-grade office paper
- Aluminum cans
- Plastic food bottles
- Bulk items
- Catalogs or books

1. Everything else can go into black bags.
2. Both are collected by the Sanitation Department.

III.C. Sharps

III.C.1. Sharps, Non-Infectious, Non-Contaminated

Examples of non-infectious and non-contaminated sharps are:

- Needles with attached tubing
- Syringes (with or without the needles attached)
- Hypodermic needles
- Suture needles, surgical needles
- Pasteur pipettes
- Broken glass beakers*
- Broken glass flasks*
- Broken glass test tubes
- Glass culture dishes
- Glass blood vials
- Glass pipettes
- Scalpel blades
- Broken rigid plastic items
- Surgical staples
- Instruments designed for cutting and puncturing (e.g., bone saws, scissors)
- Slides
- Cover slips
- Lancets
- Tweezers
- Razor blades

*These items are to be placed in a cardboard box, taped, and disposed in the Red Medical Waste Bin.

Everything else on the list are to be placed in a Leak-Proof Sharps Container (ordered through Fisher).

Medical Waste Carter will dispose of these items. This must be arranged through Housekeeping ext. 2352.



Leak-Proof Sharps Container

III.C.2. Sharps, Infectious Agents or Materials Including rDNA or Trace Chemicals*

* Coated but no visible liquid

Examples of sharps with infection agents, materials including rDNA, or trace chemicals include:

- Needles with attached tubing
- Syringes (with or without the needles attached)
- Hypodermic needles
- Suture needles, surgical needles
- Pasteur pipettes
- Broken glass beakers
- Broken glass flasks
- Broken glass test tubes
- Glass culture dishes
- Glass blood vials
- Glass pipettes
- Scalpel blades
- Broken rigid plastic items
- Surgical staples
- Instruments designed for cutting and puncturing (e.g., bone saws, scissors)
- Slides
- Cover slips
- Lancets
- Tweezers
- Razor blades

Such items should:

1. Go through chemical disinfection where appropriate.
2. Go into the Leak-Proof Sharps Container described above.
3. Go through the autoclave at 250° F for 1 hour (time and temperature may vary).
4. Go into the Red Medical Waste Bin described above.
5. Be disposed of by Medical Waste Carter (arranged through Housekeeping ext. 2352).

III.D. Labware

III.D.1. , Non-Infectious, Non-Contaminated Labware

Examples of labware are:

- Gloves
- Plastic pipettes
- Flasks
- Plates
- Bottles

- Dispensing tips
- Eppendorf tubes
- Any labware that appears as if it may have been involved with medical research

These items should go into:

The Red Medical Waste Bin and disposed of by Medical Waste Carter (arranged through Housekeeping). Ext 2352

III.D.2. Plastic Labware, Infectious, Chemically Contaminated

Examples of plastic labware included in this policy are:

- Pipettes, Plastic
- Flasks
- Plates
- Bottles
- Plastic dispensing tips
- Eppendorf tubes*

Such items should:

1. Go into a lined pipet box.
2. Go through chemical disinfection where appropriate using a 10% bleach solution in distilled water.
3. Go through the autoclave at 250° F for 1 hour (time and temperature may vary). *Remove chemicals from tubes before disposing in medical waste bin. DO NOT autoclave chemicals.
4. Go into the Red Medical Waste Bin described above.
5. Be disposed of by Medical Waste Carter (arranged through Housekeeping ext. 2352)

III.E. Infectious Materials

Examples of infectious materials are:

- Culture dishes, vessels
- Recombinant DNA
- Devices to transfer, inoculate and mix cultures
- Discarded live and attenuated vaccines, cultures
- Virus and bacteria cultures
- Human blood and blood products
- Tissue specimens (excluding animal carcasses)
- Gloves and other protective equipment

There are two methods for disinfecting infectious materials.

1. Certain liquids, such as aspirated tissue culture supernatants and blood products can be disinfected :
 - a. Through chemical disinfection where appropriate using a 10% bleach solution in distilled water.
After disinfection, the liquids can be disposed of in the laboratory sink.
2. Other infectious solids or liquids as listed above:

- A. Go through the autoclave at 250° F for 1 hour (time and temperature may vary). *Remove chemicals from tubes before disposing in medical waste bin. DO NOT autoclave chemicals.
- B. Go into the Red Medical Waste Bin described above.
- C. Be disposed of by Medical Waste Carter (arranged through Housekeeping ext. 2352)

Note: Any items that are considered sharp and are infectious must first be placed into a sharp container prior to autoclaving.

III.F. Bottles and Containers

III.F.1. Bottles, Non-Infectious, Not Chemically Contaminated

Examples of bottles are:

- Media bottles
- Saline bottles

To dispose of non-infectious, not chemically contaminated:

1. Rinse bottles three times.
2. Deface the label.
3. Dispose of the ordinary trash to be picked up by Housekeeping and collected by the Sanitation Department.

III.F.2. Broken Glass/Bottles, Non-Infectious, Not Chemically Contaminated

Example of broken glass and bottles are:

- Media bottles
- Saline bottles
- Laboratory glassware

To dispose of broken glass and bottles:

1. Place the item in a cardboard box.
2. Seal and label it “broken glass.”
3. Dispose of the ordinary trash to be picked up by Housekeeping and collected by the Sanitation Department.

Note: If the bottle has trace chemicals, place in medical waste bin instead of ordinary trash.

III.F.3. Bottles, Chemically Contaminated

To dispose of chemically contaminated bottles:

1. Rinse bottles three times, collecting the first rinsing into a labeled waste bottle.
2. Deface the label.
3. Dispose of the ordinary trash.

III.G. Chemicals

III.G.1. Chemicals, General

The Department of Environmental Health and Safety (EH&S) will remove hazardous chemical waste at NO charge. Employees must:

1. Fill out and submit a Hazardous Waste Pick up Form online at <http://www.einsteinmed.edu/administration/environmental-health-safety/laboratory-safety/chemical-safety/chemical-waste-pick-up-request.asp> Or fax the form in appendix A.
2. Label waste bottles with a Hazardous Waste Label (see Appendix B). Label must contain full name of the chemical, along with the date of the first accumulation and name of the principal investigator.

Disposal of recycled Chemicals and new unopened bottles will be arranged by EH&S to be disposed via a chemical waste broker.

III.G.2. Chemical Consolidation, Non-Chlorinated Solvents

Examples of chemicals that can be consolidated are:

- Acetone
- Acetonitrile
- Benzene
- Cyclohexanone
- Ethanol
- Ethyl acetate
- Ethylbenzene
- Isopropanol
- Methanol
- Methyl ethyl ketone
- Nitrobenzene
- Toluene
- Xylene

Chemicals from 1-gallon or 5-gallon containers:

1. Label the container using the label as shown in Appendix B.
2. EH&S will consolidate chemicals into a 55-gallon drum.
3. The drum will be disposed of by Chemical Waste Broker.

Chemicals, other than non-chlorinated solvents, may be consolidated separately. If you consistently generate a large quantity of chemical waste, please call EH&S at ext. 4150 for disposal advice.

III.G.3. Trace Chemicals*

*Do not place laboratory waste (conical tubes, sharps, gloves, etc.) into the gel containers.

Examples of trace chemicals are;

- Acrylamide gels
- Ethidium Bromide gels

To dispose of trace chemicals:

1. Place them in a black, 5-gallon can lined with a plastic bag (Do NOT use biohazard bag).
2. EH&S will arrange disposal by a Chemical Waste Broker.

III.G.4. Photographic and Chemical Fixer Disposal

Silver is a heavy metal which, in concentrations exceeding 5 ppm, is regulated by the EPA under the Resource Conservation and Recovery Act (RCRA) as a hazardous waste. Image processing is, by far, the major source of silver-containing wastes produced at Einstein.

Photographic paper and x-ray film have an emulsion of fine silver halide crystals which is released in excess in the fixer solution. The fixer stops the chemical reaction initiated by the developer and the undeveloped silver is released by the film and dissolves in the fixer. Fixer used for gel radiography and other film developing procedures will generate enough silver to be classified as hazardous wastes.

Einstein has contracted with Greymart Environmental Services (Greymart) to install and service silver recovery units in all active dark rooms that handle image/photo processing. Fixer containing silver is fed into the top of the silver recovery unit allowing gravity to pull the effluent through the filters collecting silver as the liquid moves toward the bottom of the unit.



Departments requiring installation and maintenance of a silver recovery unit must contact EH&S (x4150). Silver recovery units must not to be removed or altered in any way. If your image/photo processing equipment supplier or service provider removes the silver recovery unit to repair or replace your image/photo processing equipment, the silver recovery unit must be re-installed by the service provider prior to use.

All silver recovery units are inspected quarterly by Greymart to ensure the effluent concentration is not beyond the acceptable threshold and that all parts of the unit are functioning properly.

III.H. Animal Waste

III.H.1. Animals and Bedding, Infectious Agents or Materials Including rDNA

Cages – BSL3:

1. Autoclave at 250° F for 1 hour (time and temperature may vary).
2. Wash.
3. Recycle.

Animal Bedding – BSL3:

1. Autoclave at 250° F for 1 hour (time and temperature may vary).

2. Place bags in the ordinary trash compactor found at Ullmann loading dock or dumpster located on the Kennedy loading dock.

Animal Bedding – BSL2:

1. Spray bedding in cages with 10% bleach*
2. Place cages inside red bag (not autoclave bag) for at least 30 minutes.
3. Place in Red Medical Waste bin
4. Arrange with Housekeeping at ext. 2352 to remove the red medical waste bin from the room and transfer to the medical waste storage room for pick up and disposal by the medical waste carter.

*Note: If autoclaving, use BSL3 procedures. DO NOT bleach and autoclave.

Personal Protective Equipment (PPE) such as gloves, gowns, masks, etc.:

1. Place in a Red Medical Waste Bin
2. Arrange with Housekeeping at ext. 2352 to remove the red medical waste bin from the room and transfer to the medical waste storage room for pick up and disposal by the medical waste carter.

Animal carcasses go through the pathological waste stream:

1. Place in animal waste container.
2. Place animal waste container in Animal Institute Freezers located at:
 - a. Ullmann 1008
 - b. Chanin 622
 - c. Kennedy B25
 - d. Price B151
3. Arrange with Housekeeping at ext. 2352 to remove red medical waste bin from the room and transfer to the medical waste storage room for pick up and disposal by the medical waste carter.

III.H.2. Animal Waste and Bedding, Non-Infectious

Personal Protective Equipment (PPE) such as gloves, gowns, masks, etc.:

1. Place in Red Medical Waste Bin
2. Arrange with Housekeeping at ext. 2352 to remove red medical waste bin from the room and transfer to the medical waste storage room for pick up and disposal by the medical waste carter.

Cages:

1. Wash.
2. Recycle.

Bedding:

1. Place in ordinary trash compactor found at Ullmann loading dock or the dumpster located on the Kennedy loading dock.

Animal Carcasses:

1. Place in animal waste container.
2. Place in animal waste container located in Animal Institute Freezers located at:
 - a. Ullmann 1008
 - b. Chanin 662
 - c. Kennedy B25
 - d. Price B151
3. Arrange with Housekeeping at ext. 2352 to remove red medical waste Bin from the room and transfer to the medical waste storage room for pick up and disposal by the medical waste carter.

III.I. Radioactive Waste

Most types of radioactive waste have a cost associated with the disposal. Please contact the Radiation Safety Officer (RSO) at extension 2243 for more information on disposal costs. Radioactive waste disposal can be very costly if not handled properly. Do not hesitate to contact the RSO with any questions.

III.I.1. Disposal of Mixed Radioactive Waste

Mixed waste is radioactive waste that is mixed with other hazardous waste types such as organic solvents, metals, infections agents or a radioactive liquid mixed with another liquid that is hazardous (example: mixing a radionuclide in a flammable, corrosive, toxic, or reactive solution). This type of waste is rarely generated at Einstein. Mixed waste management and disposal is extremely expensive due to regulatory restrictions. EH&S highly recommends avoiding the generation of mixed waste.

Contact EH&S during the research proposal phase and before any mixed waste might be generated as part of the research for the appropriate disposal procedures.

If radioactive waste is mixed with a hazardous waste and the radioisotopes half-life is less than (<) 90 days, it may be held for decay and the hazardous waste will get disposed of as normal chemical waste according to its hazards. Please refer to section III.I.3 for more information on decayed waste.

Mixed radioactive waste examples: ^{14}C labeled acetic acid, ^{32}P labeled GTP in chloroform, tritiated benzo(a)pyrene in ethyl acetate.

III.I.2. Dry Solid, Radioactive Waste

Dry solid radioactive waste consists of paper, plastic, glass and gloves. It can also include small amounts of liquid absorbed onto paper towels or absorbent pads, as well as empty stock containers of radioactive material. Dry solid waste may be either long-lived (half-life > 90 days) or short-lived material (half-life < 90 days).

Short half-life materials such as ^{32}P , ^{33}P , ^{125}I , ^{35}S , ^{225}Ac , ^{18}F , and ^{51}Cr may be held for decay for 10-half-lives and disposed of as non-radioactive medical waste. The short-lived dry waste must be segregated by radioisotope into individual containers. Please refer to section III.I.3 for more information on decayed waste.

Long-lived dry solid waste including ^3H and ^{14}C should be placed in a radioactive waste container separate from short lived material. Each radioisotope's waste must be segregated into its own waste container, with the exception of ^3H and ^{14}C which can be mixed into the same waste container.

EH&S provides 5-gallon, 10-gallon, and for special occasions 30-gallon containers to laboratories for the collection of radioactive waste.



5-gallon metal container



10-gallon plastic container

Procedure: 1. Place the dry, solid radioactive waste into an appropriate container. The container must be labeled with the radiation symbol and include the radioisotope, the date, and the activity. 2. When the container is full, complete a Radioactive Waste Disposal request in [iLab](#). 3. Print and attach a copy of the disposal request to the exterior of the waste container. 4. EH&S will manage the disposal. Please contact EH&S at ext. 2243 if you have any questions.

III.I.3. Radioactive Waste - For Decay-in-Storage Within the Laboratory

Only radioisotopes with half-lives of less than (<) 90 days may be decayed inside of the laboratory.

Examples of radioactive waste subject to decay-in-storage include:

- | | | |
|---------------------|---------------------|----------------------------|
| ▪ ^{225}Ac | ▪ ^{124}I | ▪ ^{32}P |
| ▪ ^{51}Cr | ▪ ^{125}I | ▪ ^{33}P |
| ▪ ^{65}Cu | ▪ ^{131}I | ▪ ^{35}S |
| ▪ ^{18}F | ▪ ^{111}In | ▪ $^{99\text{m}}\text{Tc}$ |

This type of waste can only be dry waste and must be sorted by the radioisotope.

Place this waste in any of the containers shown below:



10-gallon plastic container



5-gallon metal container



acrylic box shielding

Waste containing short-lived radioisotopes (radioisotopes with half-lives of < 90 days) are considered “fully decayed radioactive waste” when the isotopes have been held in storage for 10 half-lives. Decayed waste is waste that is no longer considered radioactive and can be disposed of as non-radioactive medical waste.

* If the decayed waste has other hazardous components such as it is flammable, corrosive, toxic, or reactive, then the decayed waste must be collected as hazardous chemical waste and must be disposed of properly through the EH&S department.

Procedure:

1. Place the radioactive waste in the appropriate container.
2. Decay time starts when the container is full. Tape the container closed so no more waste is added to the container.
3. Waste container labels must include the radioisotope, the amount, the decay start date, and the decay end date.
4. When the waste has reached 10 half-lives, fill out a “decayed waste disposal request” in iLab on the EH&S page.
5. Print and attach a copy of the disposal request to the exterior of the waste container.
6. EH&S will manage disposal.

III.1.4. Radioactive Waste - Liquid Scintillation Vials (LSV's)

LSV's are your wipe test vials and contain radioactive waste material. A container should be kept just for this type of waste. Scintillation vials are typically collected in 5- or 10-gallon containers with a liner. Each LSV should be separated by radioisotope or based on the scintillation fluid used (i.e., long-lived radioisotope, short-lived, and/or biodegradable, corrosive, or flammable scintillation fluid). Radioisotopes such as ^{32}P , ^{35}S , ^{125}I and ^{51}Cr are “regulated” isotopes and should be separated from ^3H and ^{14}C . Separating these waste types saves money for the PI.

If non-biodegradable fluids (corrosive or flammable) are required for analysis, the vials must be separated from biodegradable scintillation vials. Biodegradable scintillation fluids may be poured down the sink, saving the laboratory the cost of drum disposal through a waste broker.

Procedure:

1. Discard of LSV's in the appropriate container separated by the type of scintillation fluid used and by either short-lived or long-lived radioisotope.
* Ensure that the caps to the vials are tightly closed to prevent spills within the container.
2. Complete a radioactive waste disposal request form in [iLab](#) when the LSV waste container is 80% full. Note on the [iLab](#) request form if the scintillation fluid is biodegradable, flammable, or corrosive.
3. EH&S will manage the disposal.

Containers to be used for liquid scintillation vial (LSV) waste:



10-gallon plastic container



5-gallon metal container

III.1.5. Radioactive Waste - Sink Disposal of Liquids

Liquid radioactive waste consists of liquid stock vials or radionuclides in water or another non-hazardous aqueous solution. This waste may be discarded in a designated sink in the amounts listed in the table below.

Radioisotope	Monthly Limit (uCi)	Daily Limit (uCi)
^{32}P	360	12
^{35}S	300	10
^{125}I	360	12
^{51}Cr	1500	50
^{14}C	900	30
^3H	360	12

All sink disposals must be documented on the Sink Disposal Log with the radioisotope, the activity of the material, the date of disposal, and the name of the individual performing the sink disposal. Material disposed of down the sink must be a liquid and not have any other toxic, corrosive, flammable, or reactive properties. A sink disposal log must be filled out when using this disposal method. Also, the disposal of the material must be noted on the materials original Radioactive Material Inventory Form. Sink disposal logs may be picked up at the EH&S office or you may print the log from the EH&S website.

Procedure:

1. Dispose of radioactive aqueous solution waste in a designated sink for radioactive material disposal following the daily and monthly limits.
2. Complete the sink disposal log each time sink disposal is completed.
3. Flush water down the designated sink drain after each sink disposal.

III.1.6. Radioactive Waste - Disposal of Large Quantities of Liquid Waste

Radioactive waste that cannot be discarded down the sink due to its level of radioactivity or due to its hazardous components may be disposed of in one of the following ways:

1. Place in a durable/unbreakable plastic container, sealed with a cover, and place in a secondary container to prevent spills. Waste container labels must include the radioisotope, the activity, the date, and a “caution: Radioactive Material” label. Complete a radioactive waste disposal request in [iLab](#). Attach a copy of the disposal request to the container.
2. If the radioisotope’s half-life is less than (<) 90 days, the radioactive waste may be held for decay. Submit a decayed waste disposal request in iLab after 10 half-lives. EH&S will review the waste before discarding. Please refer to section III.1.3 for more information on decayed waste.

III.1.7. Radioactive Waste – Animal Carcasses/Animal Bedding

Animal bedding used with radioactive animals must be collected and disposed of as radioactive waste.

Dispose of animal carcasses and animal bedding according to the following:

1. < 0.05 uCi (microcuries) of ^3H or ^{14}C per gram of animal:
 - a. Transfer to your Animal Institute’s pathological waste for disposal in either Chanin, Ullmann, Price, or the Kennedy building.
 - b. The animal cages and bedding shall be brought back to the Animal Facility.
2. > 0.05 uCi of ^3H or ^{14}C per gram of animal:
 - a. Label each animal carcass with the P.I.’s name, the radioisotope, the activity, and the date.
 - b. Store animal carcasses in a designated freezer labeled for radioactive materials. The carcasses must remain frozen until pickup is requested in iLab with EH&S.
 - c. Submit a radioactive waste disposal request form in iLab for animal carcasses.
 - d. The animal bedding must be collected as “dry radioactive waste” and disposed of as such. Submit a radiation waste disposal request in iLab to discard of this.
3. * Disposable animal cages may need to be purchased – contact Radiation Safety prior to any animal research with radioactive materials. For any amount of uCi/gram of animal used with short-lived radioisotopes (The radioisotopes half-life must be < 90 days)
 - a. Label each animal carcass with the P.I.’s name, the radioisotope, the activity, and the date.
 - b. Store the animal carcasses inside of a designated freezer labeled for radioactive materials. The animal bedding and cages used must be kept for decay as well.

- c. Hold the frozen animal carcasses, the cages, and the bedding for 10 half-lives.
- d. Submit a decayed radioactive waste request in iLab after the 10 half-lives.
- e. EH&S will review the decayed waste after receiving the disposal request in iLab.
- f. After EH&S reviews the decayed carcasses, bedding and cages, the laboratory must discard of the decayed carcasses as pathological waste within one of the Animal Facilities located in Chanin, Ullmann, Price, or the Kennedy building. The decayed cages/bedding must be brought to the Animal Facility to be cleaned.

Note: Please contact Radiation Safety before any experiments with radioactive materials and animals. There must be an Animal Protocol set up with the Institutional Animal Care and Use Committee (IACUC) prior to any work with animals

III.1.8. Radioactive Sharps

Examples of sharps include:

- | | |
|--|---|
| ▪ Needles (hypodermic, surgical, suture, etc.) | ▪ Slides |
| ▪ Syringes | ▪ Broken glass (including beakers/flasks) |
| ▪ Razorblades | ▪ Glass pipettes |
| ▪ Scalpel blades | ▪ Empty glass test tubes & vials |
| ▪ Cover slips | ▪ Lancets |

These items are to be placed inside of a regulated sharps container as shown in the pictures below.



* Be sure to label the sharps container with a “Caution: Radioactive Materials” label.

Each radioisotope used must get its own designated sharps container. Only ^3H and ^{14}C sharps may be mixed together in the same sharps container. All other radioisotopes waste must be segregated from one another. Each sharps container must be labeled with the “Caution: Radioactive materials” label and include the radioisotope, the activity, and the date. Sharps containers may be purchased through Fisher Scientific.

Procedure for radioisotopes with a half-life greater than (>) 90 days:

For “long-lived” radioactive waste, only ^3H and ^{14}C may be mixed together within the same sharps container. All other long-lived radioisotopes must be segregated from one another.

1. Place sharps into a regulated sharps container
2. Label the sharps container with a "Caution: Radioactive material" label and include a list on the side of the container which details the activity added as well as the date each time material is added to the sharps container.
3. Close the sharps container lid after use (be careful of any sharp objects protruding out from the opening).
4. Submit a radioactive disposal request in iLab when the container is ready for disposal. Be sure to note on the disposal request form that it is for a sharps container.
5. EH&S will handle the waste after the disposal request is submitted in iLab.

Procedure for radioisotopes with a half-life of less than (<) 90 days:

If the radioisotopes half-life is less than 90 days, wait 10 half-lives of the material before submitting a decayed waste disposal request.

1. Place sharps into a regulated sharps container
2. Label the sharps container with a "Caution: Radioactive material" label and include a list on the side of the container which details the activity added as well as the date each time material is added to the sharps container.
3. Close the sharps container lid after use (be careful of any sharp objects protruding out from the opening).
4. Once full, tape the container closed and write the date of closure on the top of the container. Wait 10 half-lives of the material from the closure date before submitting a disposal request.
5. Submit a decayed radioactive disposal request in iLab when the container is ready for disposal. Be sure to note on the disposal request form that it is for a sharps container.
6. EH&S will handle the waste after the disposal request is submitted in iLab.

III.J. Universal Wastes

The Universal Waste Rule permits certain hazardous wastes to be managed under streamlined requirements that encourage the collection, recycling or disposal of certain wastes. Although still considered "hazardous," this Universal Waste Rule provides for reduced management and recordkeeping requirements.

Examples of waste to be handled according to the Universal Waste Rule are:

- Fluorescent and high intensity discharge lamps, neon, mercury vapor, high pressure sodium, and metal halide lamps
- Batteries
- Mercury thermostats
- Certain pesticides
- Computer monitors (see section concerning computers below)

Such items are to be collected for disposal by the Chemical Waste Broker, which is arranged by EH&S.

Request pickup by submitting an online form at

<http://www.einsteinmed.edu/administration/environmental-health-safety/laboratory-safety/chemical-safety/chemical-waste-pick-up-request.asp>

Or by submitting a hazardous waste pickup request form (Appendix A).

III.K. Computers and Electronics

Computers, (Central/Computer Processing Units) monitors and electronics may contain hazardous materials such as lead, cadmium, and other metals; therefore, they cannot be disposed of as ordinary trash.

For all computer equipment and electronics waste (E-waste), fill out and submit a Housekeeping work order form located at <https://www.einsteinmed.edu/administration/auxiliary-services/housekeeping-work-order/> to arrange for disposal.

III.L. Paint

For unregulated, water-based paint such as latex, vinyl, or acrylic:

1. Allow paint to air-dry on plastic or cardboard.
2. Dispose of in ordinary trash.

For regulated, metal pigment paint such as oil-based containing cadmium, chromium, lead, silver, barium, mercury, arsenic, or selenium:

1. Label as hazardous waste using the Hazardous Waste Label shown in Appendix B.
2. Contact EH&S to contact the Chemical Waste Broker.

III.L.1. Paint-Related Materials

Examples of paint-related materials are:

- Oil-based paint such as alkyd, polyurethane, or varnish
- Brushes
- Rags
- Aerosol cans*
- Thinner

To dispose of such materials:

1. Label as hazardous waste using the Hazardous Waste Label shown in Appendix B.
2. Contact EH&S to contact the Chemical Waste Broker.

*Aerosol cans that are completely empty may be disposed of in ordinary black trash bags.

III.M. PCB Waste

Polychlorinated biphenyls (PCBs) are synthetic chemical compounds consisting of chlorine, carbon, and hydrogen which may be present in products and materials produced before the 1979 PCB ban. PCBs may be a clear to yellow oily liquid or waxy solid.

PCBs can still be found in certain devices, products or electronic equipment and must be disposed of as hazardous waste.

Examples of items that may contain PCBs are:

- Transformers and capacitors
- Electrical equipment including voltage regulators, switches, re-closers, bushings, and electromagnets
- Circuit breakers
- Immersion oils used for high magnification (oil immersion) microscope lenses
- Oil used in motors and hydraulic systems
- Old electrical devices or appliances containing PCB capacitors
- Fluorescent light ballasts
- X-ray generating devices
- Cable insulation
- Heat transfer systems
- Thermal insulation material including fiberglass, felt, foam, and cork
- Adhesives and tapes
- Oil-based paint
- Caulking
- Plastics
- Carbonless copy paper
- Floor finish

To dispose of these items, contact EH&S at ext 4150 to contact the Chemical Waste Broker.

III.N. Disposal of Refrigeration Units

Freon is an ozone-depleting chemical from refrigerators, freezers, air conditioning units, etc., and must be reclaimed and recycled. Failure to do so is a violation of federal law and state law. Einstein reclaims refrigerant from old or nonfunctioning units and reuses it in other areas.

All refrigerators and freezers, whether they are working or non-working, must be disposed of in the following manner:

1. The refrigerator or freezer must be cleaned and disinfected by laboratory personnel. If laboratory personnel are not available, then someone in the department must ensure that the unit is cleaned and disinfected.
2. Call ext. 2573 to have the piece of equipment removed from the Einstein inventory.

3. To request clearance, go to the following website:
<https://www.einsteinmed.edu/administration/environmental-health-safety/radiation-safety/clearance-request.aspx>
4. The laboratory or administrator must submit a work order to the Engineering department to have the refrigerant removed. Once Engineering removes the refrigerant, a work order must be submitted to Housekeeping to dispose of the unit.

III.O. Contact Information

For additional information on the hazards in your work area, please contact your supervisor or Environmental Health and Safety: (718) 430-4150.

IV. Definitions

None.

V. Effective Date

Effective as of: July 2023

VI. Policy Management and Responsibilities

Einstein's Department of Environmental Health and Safety is the Responsible Office under this Policy. Einstein's Senior Associate Dean for Operations and Finance is the Responsible Executive. Montefiore's Associate Vice President of Environmental Health and Safety is the Responsible Officer for the management of this Policy.

VII. Approved (or Revised)




Responsible Executive

12/6/2023

Date

Appendix A: Hazardous Waste Pick Up Form

If you require hazardous waste pick-up, complete a hazardous waste pickup request form, a copy of this form must be forwarded to Forchheimer 800 by mail, or fax it to ext. 8740. You may also obtain a pick up by submitting an online form at <https://www.einsteinmed.edu/administration/environmental-health-safety/laboratory-safety/chemical-safety/chemical-waste-pick-up-request.asp>

 Hazardous Waste Pick-Up Request Form	
Albert Einstein College of Medicine	
Requester:	Date:
Principal Investigator:	Extension:
Email:	Building/Room
Location of Waste:	

Waste Description If mixed, list all known chemicals and concentrations	Volume (L) or Weight (Kg)	# of Containers	Type of Container
1.			<input type="checkbox"/> Glass <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Box
2.			<input type="checkbox"/> Glass <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Box
3.			<input type="checkbox"/> Glass <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Box
4.			<input type="checkbox"/> Glass <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Box
5.			<input type="checkbox"/> Glass <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Box
6.			<input type="checkbox"/> Glass <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Box

Please note that each item of waste must have an attached [Hazardous Waste Label](#). Any container without a Hazardous Waste Label cannot be picked up by Environmental Health and Safety. Improperly completed forms and labels will cause delays in waste pick-up.

For Office Use Only	
Comments:	
EH&S Technician Initial:	Date:

On completion, fax to: x8740, deliver or mail to: EH&S - Forch 800, or email: Einstein-safety@einsteinmed.edu

31 August 2023

EHS-FRM-2018-005
©2023 Albert Einstein College of Medicine

1

Waste will be picked up within one week of the request. To avoid delays, ensure that the waste is labeled properly and safe to transport.

Appendix B: Hazardous Waste Label

The waste label below must be affixed to each waste container and must include the start date of collection, the full name of the chemical (no abbreviations) and approximate amount of the waste. A material is waste when you declare it as waste and at which time you affix the label.

Albert Einstein College of Medicine	
HAZARDOUS WASTE	
START DATE: _____	END DATE: _____
SUPERVISOR: _____	EXT: _____
<u>CHEMICAL COMPONENTS</u>	<u>AMOUNT</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
<input type="checkbox"/> FLAMMABLE <input type="checkbox"/> TOXIC <input type="checkbox"/> REACTIVE <input type="checkbox"/> CORROSIVE	
Please handle with care.	
If you have any questions, contact: EH&S at x4150	

These labels can be obtained through EH&S at ext. 4150 or may be picked up in Forchheimer 800. Waste cannot be stored longer than 90 days from the end date on the label. Complete the Hazardous Waste Pick Up Form shown online (or on previous page appendix A) before the 90-day holding period ends.

[illegible]

23 of 24

Appendix D: Chemical Waste Safety Bulletin**SAFETY BULLETIN*****HAZARDOUS CHEMICAL WASTE DISPOSAL – LABORATORIES***

The proper disposal of chemicals from our laboratories is by collection in a labeled bottle, stored closed in a safe location. The label must indicate the start date of the chemical collection and the name of the chemical being collected. Once the container is ready for disposal, arrangement for a chemical waste pick up is made by completing a “Hazardous Waste Pick Up Form” and faxing it to x8740. There is no charge to the lab for a chemical pick up.

***HAZARDOUS CHEMICALS ARE NEVER TO BE DISPOSED OF DOWN THE DRAINS.***

This is a hard concept for some people to understand for various reasons. Nevertheless, Federal, State, and City laws prohibit the disposal of chemicals down the drains. Recently, the EPA has given large fines (in excess of several hundred thousand dollars), to neighboring institutions for sink disposal of hazardous chemicals. The NYC sanitary sewer is not able to handle hazardous chemical disposal and therefore, chemicals entering the sewer may ultimately be released into the surrounding waterways where they may cause environmental damage.

Please review your laboratory activities and ensure that NO hazardous chemicals are disposed down the drains.

If you have any questions regarding chemical waste disposal, please review our Hazardous Waste Guidelines at our web site: www.einsteinmed.edu/ehs or contact Environmental Health and Safety at x4150.