

# NIH Waste Disposal Guide 2022

Cover Created by Jai Gadhia  
of the NIH/NCATS Family

Keep the water  
clean so we can drink  
it!



Recycle! Don't Litter!



DRINKING  
water



Spills or Emergencies - call:  
On campus: 911  
Off campus: 9-911

Up to date information can be found at:  
<https://www.orf.od.nih.gov/EnvironmentalProtection/WasteDisposal>



National Institutes of Health  
Office of Management



## **Cover Created by Jai Gadhai**

### **A little about Jai:**

Jai is a Fourth grader, who loves art and the environment. He's also a cub scout, baseball player, book enthusiast, robotics tinkerer, young entrepreneur, and innovator, excellent student, and a sweet boy all around. He and his older brother created a product called Vegetarian Dreams, which is a wishbone that they designed using polymer clay. Jai wanted to include everyone in the Thanksgiving wishbone tradition, including vegetarians such as himself. So, he designed this product and successfully sold it at a fair last year.

### **Jai's Mom Bio**

<https://ncats.nih.gov/staff/gadhiaad>

# NIH Laboratory Waste Disposal Matrix

Laboratory (Dry) Waste [✓ = Best Practice/Recommended Method]	Acceptable Disposal Methods <sup>3</sup>			
	Chemical Waste	MPW	Disposable Labware and Broken glassware (Solid waste/ Trash)	Recycle
<b>PPE (Disposable Lab coats, gloves, booties, face mask, absorbent pads etc.)</b>				
Contaminated during Biomedical <sup>1</sup> procedures	Not Authorized	✓	Not Authorized	Not Authorized
Contaminated during Chemical procedures	✓	Not Authorized	Not Authorized	Not Authorized
General Use (uncontaminated)	✓	✓	Not Authorized	Not Authorized
<b>Labware (Beakers, flasks, graduated cylinders, pipettes, test tubes, etc.)</b>				
Contaminated glassware - Biomedical Residue	Not Authorized	✓	Not Authorized	Not Authorized
Contaminated glassware - Chemical Residue	✓	Not Authorized	Not Authorized	Not Authorized
Decontaminated/Disinfected/Unused or Broken glassware <sup>2</sup>	Acceptable	Acceptable	✓	Not Authorized
Contaminated plastic labware – Biomedical Residue	Not Authorized	✓	Not Authorized	Not Authorized
Contaminated plastic labware – Chemical Residue	✓	Not Authorized	Not Authorized	Not Authorized
Decontaminated empty reagent bottles (plastic or glass) (Autoclave or Bleach) <sup>2</sup>	Acceptable	Acceptable	✓	Not Authorized
Empty Reagent bottles	✓	Not Authorized	Not Authorized	Not Authorized
Non-Hazardous plastic labware (including pipettes and pipette tips) <sup>2</sup>	✓	Acceptable	Acceptable	Not Authorized
Decontaminated/Disinfected/Unused plastic ware	Acceptable	Acceptable	✓	Not Authorized
Labware packaging	Not Authorized	Not Authorized	✓	Not Authorized
Pipette Tip Racks	Not Authorized	Not Authorized	Not Authorized	✓
<b>Pathological materials</b>				
Animal carcasses, anatomical waste, organs, tissues from humans or animals (no liquids)	Not Authorized	✓	Not Authorized	Not Authorized
<b>Sharps</b>				
Sharp's container w/ scalpels, razor blades, Pasteur & micro-fine pipettes, all needles & syringes	Not Authorized	✓	Not Authorized	Not Authorized
<b>Miscellaneous</b>				
Waste containing or contaminated with infectious or pathogenic agent(s)	Not Authorized	✓	Not Authorized	Not Authorized
Animal bedding contaminated with Cytotoxic or Cytostatic drugs which cannot be decontaminated through autoclave	Not Authorized	✓	Not Authorized	Not Authorized
Animal bedding - Decontaminated	Not Authorized	Acceptable	✓	Not Authorized
Animal transport boxes that contained infectious animals	Not Authorized	✓	Not Authorized	Not Authorized
Materials contaminated with residual Cytotoxic or Cytostatic drug(s) (i.e., empty drug vials, patient care materials, towels, absorbent pads, catheters, IV Bags, <3% Liquids)	Not Authorized	✓	Not Authorized	Not Authorized
Biohazard Bags	Not Authorized	✓	Not Authorized	Not Authorized

1 Biomedical– waste with the presence of pathogenic agents, human tissues, animal carcasses, tissues from biomedical research, and other discarded materials that are regulated as medical waste by the U.S. Department of Transportation, state or local laws.

2 Disposal through Solid waste requires material containment in the Disposable Labware & Broken Glass box (NSN-8115-01-154-2305)

3 Call the Division of Radiation Safety (DRS) for proper disposal of all dry radioactive materials/wastes from laboratories even if combined with another waste stream.



# Chemical Waste

Non-radioactive chemical (solids, liquids, gases) and other waste with hazardous chemicals. [Waste Minimization and Pollution Prevention Guidance](#)

## Examples of Chemical Waste

- Non-radioactive lead shielding and lead scrap
- Chemical reagents; disinfectants, all types
- Oils, all types
- Batteries, all types
- Sodium vapor and HID lamps
- Fluorescent light tubes and bulbs
- Photographic film processing solutions and X-ray film
- Mercury-containing items (thermometers, batteries, UV lamps, sphygmomanometers, etc.)
- Cytotoxic or Cytostatic agents & prescription drugs and antibiotics (non-controlled substances)
- Non-returnable gas cylinders and lecture bottles
- Gels contaminated with ethidium bromide, acrylamide, or other stains
- Pharmaceuticals containing items (e.g., animal feed and water bottles)

## Tag and Identify

### General Information - Identification and labeling

- Use Chemical Waste Tag (NSN-7530-00-L07-5985) from the Self-Service Store/NIH Stock Supply Catalog
- Identify all major constituents and hazardous components by chemical name
- Don't use acronym or brand name
- Complete information on front of tag as soon as the first drop of waste is added to the container
- Label Erlenmeyer flasks, beakers' and aspirator waste containers with the word "Waste," chemical contents, and date
- Tag and label HPLC interim waste collection containers



### [Additional information on chemical waste tag](#)

#### Do not mix

- Mercury or Mercury-containing materials with any other waste
- Dioxin or dioxin containing materials with any other waste
- Peroxide forming chemicals with any other waste
- Oxidizing agents with organic compounds, flammable, and combustible materials
- Oxidizing agents with reducing agents (e.g., zinc, alkaline metals)
- Strong Acids with:
  - Organic, flammable, and combustible materials
  - Basic (caustics) and reactive metals such as sodium, magnesium, and potassium
  - Chemicals which can generate toxic gases upon contact such as sodium cyanide, iron sulfide, azides, and phosphides

### [Additional information on chemical segregation](#)

- Store in the laboratory where the waste is generated while awaiting pickup
  - **DO NOT PUT WASTE CONTAINERS IN THE HALLWAY OR OTHER PUBLIC LOCATIONS.**
  - **DO NOT TRANSPORT WASTE ACROSS HALLWAY TO ANOTHER LOCATION FOR STORAGE**
- Ensure that all chemical waste containers are closed securely except at the time waste is added
- Use NIH approved funnels with lids. Close the lid when not adding waste to the container
- Place liquid waste containers in secondary containment pan(s) away from ignition and heat sources
- Do not fill containers over the indicated fill line
- Keep exterior surface of containers free of contamination
- **Chemical waste MUST be picked up within 60 days of the accumulation start date**



## Waste Container Storage

## Prohibited waste Management Practices in Laboratories

### Forbidden waste disposal methods

- Discarding chemical waste via sinks (Except where authorized by the [NIH Drain Discharge Guidance](#)), in Medical Pathological Waste (MPW) boxes, or trash bins and dumpsters
- Discarding radioactive materials, oxidizers, heavy metals, phenols, acids, bases, chemicals deemed toxic by inhalation hazards, explosive and reactive chemicals in flammable solvent safety cans
- Treating chemical waste in the laboratory. Example: **Evaporating volatile chemicals in laboratory spaces or chemical hoods; Acid/Base neutralization; Waste dilution**

### Waste minimization

- NIH seeks to support Federal incentives to restrict the purchase and use of specific toxic chemicals by employing sound waste minimization techniques and affirmative procurement strategies. [Information on Toxic Chemicals Reduction Initiative](#)
- Before purchasing new chemicals, check out NIH's free surplus chemical inventory at the NIH [FreeStuff website](#). Contact DEP (301-496-7990) for information on NIH's solvent recycling program

## Waste Minimization and Toxic Chemicals Reduction

## Chemical Waste Collected in Empty Chemical Bottles

## Multiple Containers of Chemical Waste

## Larger Volume of Aqueous Mixtures Containing Organic Compounds

## Flammable Liquids

## Chemically Contaminated Dry Waste

# Waste Management Procedures

### Waste collection in empty containers

- Empty chemical bottles may be used to collect small quantities of chemical waste
- Cross out the original label and use a chemical waste tag
- A completed chemical waste tag is required for each bottle before pick-up by the Chemical Waste Services



- Multiple containers of compatible chemicals may be placed in a single box for disposal
- The chemical contents of each container must be identified
  - For chemical waste that is in its original container, write the word “WASTE” on the bottle and the date
  - For chemical waste that is not in its original container, complete and attach a chemical waste tag
  - Compatible materials in their original containers can be placed into an empty box with a chemical waste tag attached to the box. Complete generator information and chemical characteristics
- Do not stack chemical containers on top of each other
- Do not seal the box



### Large volume of aqueous waste collection

- Chemical waste containers (3 or 5 gal) can be requested from Chemical Waste Services, (301) 496-4710
- Combine only compatible chemicals in a container. [Information on chemical compatibility](#)
- Examples of waste placed in these containers include formalin, phenol, chloroform, and aqueous liquids with trace organics. [Information on what goes in these containers](#)
- Complete and attach a Chemical Waste Tag to the container when the first waste is added to the container
- **Place the DATE on the tag at the start of waste accumulation**
- Record on the Chemical Waste Tag each chemical added to the container and its concentration and volume
- Store waste containers in secondary containment pans away from ignition and heat sources



### Large volume of flammable waste collection

- Use only the safety cans provided by the Chemical Waste Services, (301) 496-4710
- Complete and attach a Chemical Waste Tag to the container when the first waste is added to the container
- Record on the Chemical Waste Tag each chemical added to the container and the concentration and volume
- Examples of waste that can be placed in these containers include DNA/HPLC wastes, alcohols, xylenes, acetonitrile, and organic solvents
- Contents within the safety can should not exceed the “fill” line demarcated on the can
- HPLC users can request containers with special fittings to connect to the HPLC machine, (301) 496-4710
- Do not place radioactive material, inorganic/organic acids, bases, metallic compounds, or mixtures with high water content in these containers
- Store waste containers in secondary containment pans away from ignition and heat sources



### Contaminated Dry waste collection

- **DO NOT PLACE radioactive materials, infectious wastes, liquids, biohazard bags, sharps, or broken glass with this waste**
- Place materials in a clear plastic bag (NSN-8105-01-195-8730)
- Close plastic bag with filament tape or bag closure tie
- Place bag in a plain cardboard box or double bag the dry waste
- Complete and attach a Chemical Waste Tag
- Examples of this type of waste: chemically contaminated gloves (non-pathogenic), pipette tips, absorbent paper, and disposable lab coats



Continued on next page



# Chemical Waste

## Chemically Contaminated Gels

- All Gels contaminated with ethidium bromide, polyacrylamide, or other stains must be collected as chemical waste
- Do not dispose of gels in MPW boxes
- Gels can be collected in a plastic bag lined box or 5-gallon pail with liner
- To order a 5-gallon pail container, call the Chemical Waste Services, (301) 496-4710
- Collection containers must not contain any free liquids
- Complete and attach a Chemical Waste Tag to the container. Identify gel types and contaminants
- Container must be closed except when adding waste



## Explosive/Reactive Chemicals

- **STORE SAFELY** in accordance with manufacturer's instructions
- For explosive/reactive chemicals that appear unstable/compromised, call Division of Environmental Protection (DEP), (301) 496-7990 immediately for guidance
- Examples of explosive/reactive chemicals include peroxidized ethers, dry picric acid, organic peroxides, peroxy acids, polynitro compounds, hydrides of sodium, lithium, and alkali metals

### [Additional information on explosive and reactive chemicals](#)

- Human use, call Clinical Center Pharmacy, (301) 496-1914
- Non-human use, call Veterinary Resources Pharmacy, (301) 435-2780

## Disposal of Narcotics and Controlled Substances

- Call DEP for guidance as soon as you become aware of your move, (301) 496-7990
- Laboratories are responsible for procuring this service from approved vendors

### [Laboratory Chemical Move Procedure](#)

## Laboratory Moves Transferring Chemicals

## Empty Chemical Bottles

- All empty bottles (glass, plastic, and metal) that previously contained chemicals (liquid, solid) or buffer saline solutions can be recycled if collected by the Chemical Disposal Service. Leave the cap on the empty bottle
- Call Chemical Waste Services to request collection totes for the empty bottles
- Empty bottles and totes are to be stored in labs before pick up
- Empty bottles that previously contained infectious or radioactive material are **not** acceptable for recycling
- Empty bottles can also be reused to collect small quantities of chemical waste (see [Waste Collection in Empty Bottles](#))
- **For further guidance, refer to [Lab Waste Disposal Matrix](#) (See Table in the beginning of this guide)**
- **Do not place empty chemical bottles into or around commingled recycling bins**



## Batteries

- UPS (uninterruptible power source) Batteries must be removed from the UPS casing before pick up. Call DSEIS, (301) 496-4131
- All Batteries must be collected for recycling by the Chemical Disposal Service, including non-UPS batteries internal to equipment
- Examples are alkaline, all rechargeable batteries, lithium, lead-acid, and all other types

## Procurement, Use and Disposal of Mercury and Its Compounds

- Purchase and use of mercury and its compounds are prohibited in accordance with [NIH Policy Manual Issuance 3033](#)
- Exceptions to the prohibition on procurement and use may be granted for limited scientific and medical benefits of mercury or mercury compounds for which there are no acceptable alternatives
- To procure or use mercury product(s), complete [NIH Form 2936](#).
- For incidents involving mercury spills/thermometer breakages, contact the Fire Department. Follow-up notification should be made to DEP (301) 496-7990; DEPDecom@mail.nih.gov.

### [NIH's Mercury Remediation Program](#)

## Formalin/Aldehyde Solutions with Tissue, Human and Animal Parts

- Separate the tissue from the formalin or formaldehyde solution; dispose of the liquid through chemical disposal services; dispose of the tissue in MPW box

# Multihazardous Waste

## Examples of Multihazardous Waste

Multihazardous waste contains two or more of the following: radioactive material, infectious agent(s), or hazardous chemical(s). One type of multihazardous waste is Mixed Waste - Waste that contains both a hazardous component and radioactive material regulated by the NRC. "Mixed Waste" is a subset of multihazardous waste.

- Aqueous radioactive wastes containing chloroform or heavy metals
- Methanol/acetic acid solutions from electrophoresis procedures containing radioactive material
- Hazardous liquid scintillation counting fluids with radioactive content
- Radioactive trichloroacetic acid solutions
- Phenol/chloroform mixtures used to extract DNA from radiolabeled cells
- Vacuum pump oil contaminated with radioactive material
- Chemical or radioactive wastes containing infectious agents
- Used animal bedding contaminated with at least two of the above listed hazard types (chemical, radioactive, and infectious)
- Lead contaminated with radioactive material
- Aqueous radioactive liquids with pH  $\leq 2$  or  $> 12.5$

## General Information

Mixed waste containers (4L, 10L, and 20L) and spill trays are available by calling Radioactive Waste Service at (301) 496-4451. Caution-Radioactive Material labels (NSN-7690-00-833-0318), Radioactive Waste Pickup Receipts (NSN-7530-00-L07-8835), and Chemical Waste Tags (NSN-7530-00-L07-5985) are available at the self-service store. Call (301) 496-4451 or log on to <http://drsportal.ors.od.nih.gov/> to request your mixed waste pickup.



## Avoid Generating

- Avoid generating multihazardous wastes as disposal can be difficult and expensive. For help in avoiding the generation of multihazardous waste, call the Division of Environmental Protection (DEP), (301) 496-7990 or the Division of Radiation Safety (DRS), (301) 496-5774

## Minimize Generation Inactive Waste

- Minimize volumes generated if the generation of multihazardous waste cannot be avoided
- PRIOR to beginning work activities that will generate multihazardous waste, call DEP or DRS for waste management information
- Inactivation of the agent(s) is usually the first step in the disposal process if the multihazardous waste contains an infectious agent(s).
- Contact your Health and Safety Specialist in the Department of Health and Safety (DOHS) at (301) 496-2346, for appropriate inactivation methods
- Specific procedures for autoclaving radioactive waste must be approved by your Area Health Physicist prior to use of an autoclave to inactivate the waste (see [Radioactive Waste Section](#))

## Security

- Mixed waste must be secured or held under constant surveillance to prevent unauthorized removal or access. Consult your Area Health Physicist in DRS at (301) 496-5774, for more information

## Incompatible Mixture

### Do Not Mix

- Liquid mixed waste with solid radioactive waste
- Hazardous chemicals with radioactive aqueous wastes
- Segregate by isotope half-life: very short (<30 days), intermediate (30-120 days), and long (>120 days)
- Flammable liquids with radioactive material
- Radioactive aqueous wastes with high organic content mixed waste
- Infectious agents with non-infectious materials



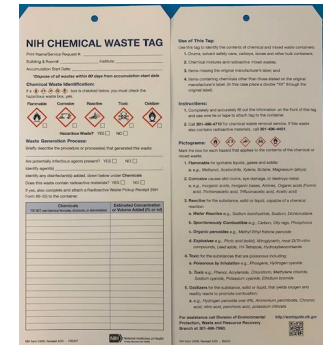


# Multihazardous Waste

## Identify and Label

### Identification and labeling

- List on the Radioactive Waste Pickup Receipt an estimate of radionuclide(s) and activity present at time of pick-up
- Record on the Chemical Waste Tag each chemical added to the container with the concentration and volume
- Ensure that all mixed waste containers have a:
  - Caution-Radioactive Material label (NSN-7690-00-833-0318)
  - Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)
  - Chemical Waste Tag (NIH 2459, (NSN-7530-00-L07-5985) or equivalent chemical waste contractor supplied tag



## Shielding Requirements

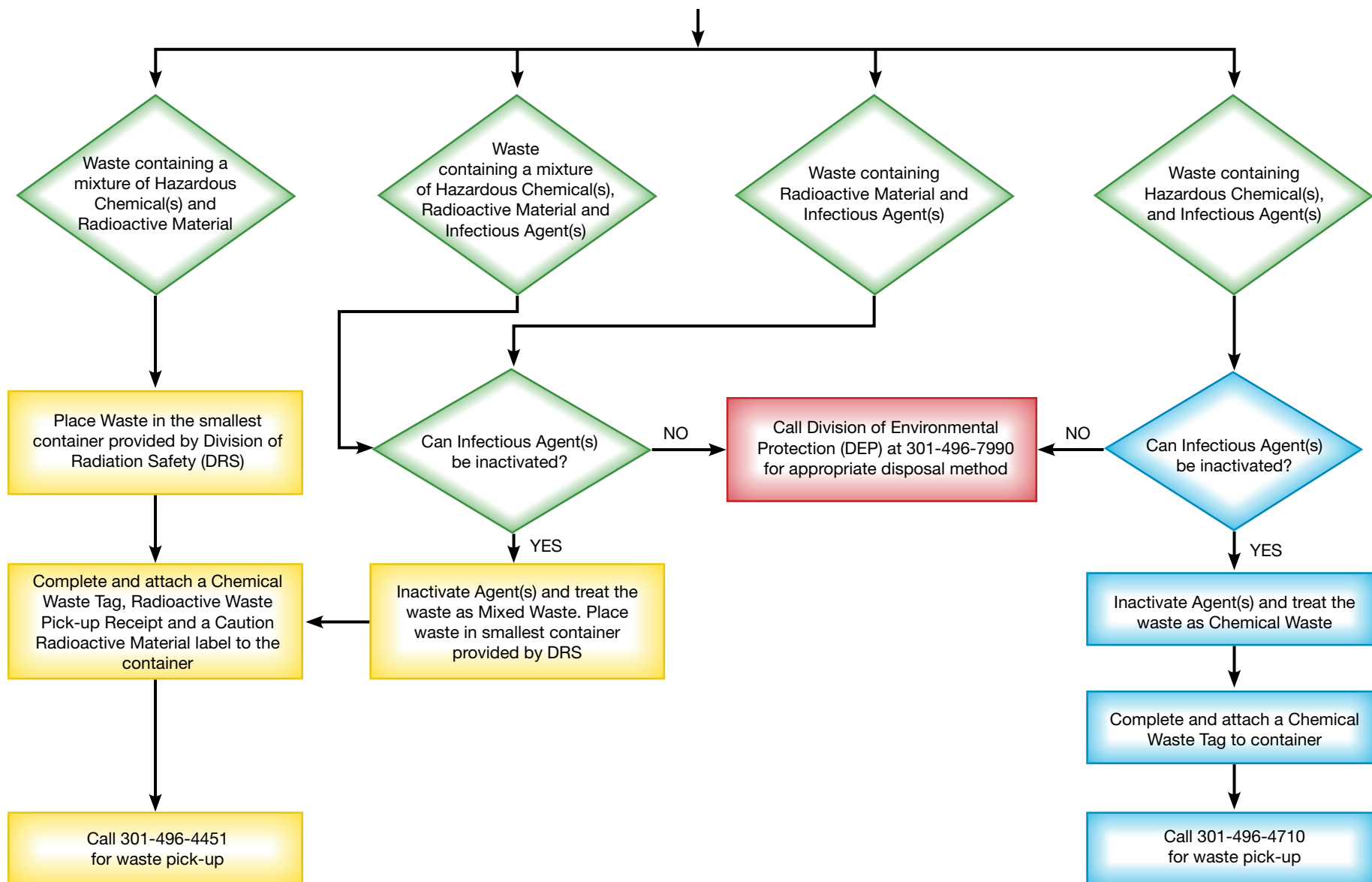
- Shield radioactive material such that:
  - Radiation levels are less than 2 millirem/hour @ 10 cm within a posted laboratory, AND radiation levels are less than 0.5 millirem/hour or 50 millirems in a year in an unrestricted area (e.g., space adjacent to a posted laboratory or corridor)
- The Radioactive Waste Service recycles beta/plastic and lead shielding - call (301) 496-4451 and inquire if shielding is available

## Waste Storage

- Mixed waste containing radioactive material must only be stored in laboratories posted for the use of radioactive material
- NEVER place mixed waste in corridors - even while awaiting pickup
- Ensure that all waste containers are closed securely to prevent leaks, spills, or escape of vapors
- Mixed waste must be stored in appropriate spill containment trays or devices
- Mixed waste must be picked up within 60 days of the collection start date



## Waste Management and Disposal Procedures for Multihazardous Waste



### Liquid Scintillation Vials With Flammable Material

#### Specific Types of Mixed Waste

- Ensure vials caps are securely tightened
- Place vials in original tray or box (with plastic liner)
- Separate by radionuclide - Vials with the same nuclide may be grouped together and H-3 & C-14 may be grouped together
- Attach to tray or box:
  - Caution-Radioactive Material label (NSN-7690-00-833-0318)
  - Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835). Add the name of Scintillation Cocktail to Pickup Receipt



### Lead Contaminated With Radioactive Material

- Place lead in box and attach:
  - Caution-Radioactive Material label (NSN-7690-00-833-0318)
  - Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)
  - Chemical Waste Tag (NSN-7530-00-L07-5985)





## Waste Storage

- Radioactive waste must only be stored in laboratories posted for the use of radioactive material
- NEVER place radioactive waste in corridors-even while awaiting pickup
- Ensure that all waste containers are closed securely

## Waste Management Procedures for Material Contaminated With Radioactive Material

- **Do not discard radioactive wastes into sink drains**
- Use plastic carboys available from Radioactive Waste Service, (301) 496-4451
- Contents should NOT exceed the "Fill Line" on the container
- Secure the cap of the container tightly
- Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)



## Aqueous Waste

## Solvents/Other Hazardous Chemical Constituents

- Refer to Multihazardous Waste Section
- Use special mixed waste containers available from the Radioactive Waste Service, (301) 496-4451
- Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835) and a Chemical Waste Tag (NSN-7530-00-L07-5985)
- As chemicals are added to the container, record chemical name, amount, and concentration on the Chemical Waste Tag

## Disposable Labware

- Use Disposable Labware & Broken Glass box (NSN-811500N192305)
- Use absorbent paper pads for residual liquid in the bottom of the box
- Close and secure box with filament tape
- Affix Caution-Radioactive Material label (NSN-7690-00-833-0318)
- Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)

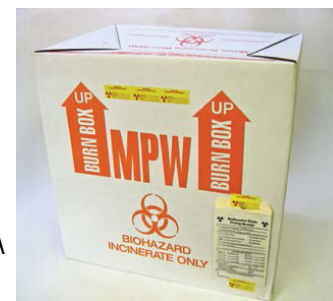
## "Sharps" (needles, syringes, scalpel blades/razor blades, micro-fine pipette tips, etc.

- Place "sharps" in a puncture resistant container: (small: NSN-6530-01-294-2865; syringes, scalpel or medium: NSN-6530-01-274-5099)
- Fill only 3/4 full, snap lid closed, then place sharps box inside MPW box
- Affix Caution-Radioactive Material label (NSN-7690-00-833-0318)
- Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)



## MPW, Patient Care Materials, Animal Carcasses or Tissues, Bedding or Solid Excreta With Radionuclides

- Use MPW box (NSN-8115-00-L04-0680), add absorbent material if necessary
- Fold the flaps down on the outside of the box. Only use the two black plastic bags that come with MPW box
- Place TWO plastic bags (one inside the other) into the MPW box and pull the bag tops down over the flaps
- A filled MPW box should weigh NO MORE than 40 pounds or be no more than 3/4 full (DO NOT OVERFILL)
- Seal each bag SEPARATELY. Twist plastic bag at the top, bend the twisted portion to form a loop, and seal using the plastic bag closure tie
- Close the box. Fold Flap A down into the box, fold the B Flaps over Flap A, push Flap C down to lock with Flap A
- PRINT your building, room number, type of waste (sharps, patient care, animal tissue, etc.) on the box top label area
- Clearly affix Caution- Radioactive Material label (NSN-7690-00-833-0318) and Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)



**NOTE: For animal tissue or carcasses, refrigerate or freeze if held longer than 4 hours; freeze if held more than 24 hours**

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# Radioactive Waste

## Infectious Waste to be Autoclaved

- Contact your Area Health Physicist for guidance on autoclaving radioactive material prior to using an autoclave to process the material
- A Caution, Radioactive material label, must be affixed to any autoclave in which radioactive material will be processed
- Use TWO (one inside the other) autoclavable Biohazard bags imprinted with process indicator (small: NSN-6530-01-282-6378; medium: NSN-6530-01-142-2255; large: NSN-6530-01-218-4644)
- Place bags in pan for transporting and autoclaving
- Add 50 ml water to the inner autoclave bag BEFORE closing and seal each bag SEPARATELY with autoclave tape
- Process for 60 minutes at minimum 121° Centigrade
- Cool and affix Caution-Radioactive Material label (NSN-7690-00-833-0318) and Radioactive Waste Pick-up Receipt (NSN-7530-00-L07-8835)
- Specific procedures for autoclaving radioactive waste must be approved by your Area Health Physicist prior to use of an autoclave to inactivate the waste
- Survey the inside of the autoclave for radioactive contamination following use of the autoclave
- Chemical indicator should be included in every run to ensure adequate sterilization

**NOTE: Autoclaves must be maintained to the manufacturer's specifications and validated monthly**

## Lead

- Lead which contains or is contaminated with radioactive material is a mixed waste—see the [Multihazardous Waste Section](#)

## Liquid Scintillation Vials

- Vials with hazardous chemical(s) are a mixed waste—see the [Multihazardous Waste Section](#)
- Segregate securely capped vials according to radionuclide—H-3 or C-14 may be disposed of together
- Segregate securely capped vials according to cocktail type
- Place vials in original shipping tray or box—trays with the same radionuclide may be grouped together
- Clearly affix Caution-Radioactive Material label (NSN-7690-00-833-0318)
- Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835). Add the name of Scintillation Cocktail to Pickup Receipt



## Source Vials

- Empty vials may be disposed of in stepcan as dry solid radioactive waste
- For vials containing radioactive fluid or vials with lead packaging:
  - Place securely capped vials in a small box (with plastic bag liner)
  - Affix a Caution-Radioactive Material label (NSN-7690-00-833-0318) to the box
  - Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)



## Other Types of Dry/Solid Material

- Use labeled stepcan containers (with liner bags) available from Radioactive Waste Service, (301) 496-4451
- Clearly affix Caution-Radioactive Material label (NSN-7690-00-833-0318)
- Attach a Radioactive Waste Pickup Receipt (NSN-7530-00-L07-8835)

## Contaminated Equipment

- Call the Radioactive Waste Service, (301) 496-4451, for guidance on disposing contaminated equipment

## Survey Instruments

- Contact your Area Health Physicist to see if your survey instrument can be recycled
- Remove the radioactive source from the side of the instrument and call Radioactive Waste Service at (301) 496-4451 to pick-up the check source. Dispose of the survey meter and accessories through the NIH property management system
- Attach a Radioactive Waste Pick-up Receipt (NSN-7530-00-L07-8835) to the check source
- Contact your Area Health Physicist or visit the DRS website at: [http://drs.ors.od.nih.gov/policies/Pages/equip\\_clearance.aspx](http://drs.ors.od.nih.gov/policies/Pages/equip_clearance.aspx) [#xrayclear](#) for guidance on how to surplus Liquid Scintillation or Gamma counters and other laboratory equipment containing internal radioactive sources

## Uranium and Thorium Compounds

- Call the Radioactive Waste Services, (301) 496-4451, for guidance on disposing all forms of Uranium and Thorium waste



# Medical Pathological Waste (MPW)

## Examples of MPW

## MPW Contaminated with Radioactive Materials or Hazardous Chemicals

## Decontaminate

## Disinfectants

## Steam Sterilization/ Autoclave

### Waste must not be contaminated with radioisotopes or hazardous chemicals

- Waste containing or contaminated with the infectious or pathogenic agent(s)
- Pathological waste includes: animal carcasses and anatomical waste (organs, tissue from humans or animals)
- Sharps containers (scalpels, razor blades, Pasteur pipettes, micro-fine pipette tips, capillary pipettes, pathology glass slides, all needles, and syringes). (See "Sharps" section.)
- Animal bedding contaminated with pathogenic agents which cannot be decontaminated through autoclaving
- Any material potentially contaminated with cytotoxic or cytostatic drug(s): empty cytotoxic or cytostatic drug vials, drug dispensing apparatus, patient care materials, towels, absorbent material, or similar materials
- Other discarded materials that are regulated as medical waste by the U.S. Department of Transportation, state or local laws

### General Information

- For disposal of MPW which contains or is contaminated with radioactive material or hazardous chemicals, refer to the [Multihazardous Waste Section](#)

### MPW Minimization - Converting MPW to General Waste:

- Examples of MPW which may be converted to general waste through decontamination/inactivation:
  - Liquid clinical specimens (urine, blood)
  - Patient care materials: towels, absorbent material, or similar materials
  - Cultures and media
- For assistance with decontamination procedures, call your Health and Safety Specialist, (301) 496-2346

- Suitable chemical disinfectants include:

– Sodium hypochlorite (bleach at 5.25%), (**Mercury Free**), 1:10 dilution

### Always use a disinfectant appropriate to the infectious material you wish to inactivate

- Use autoclavable Biohazard bags imprinted with process indicator: (small: NSN-6530-01-282-6378; medium: NSN-6530-01-142-2255; large: NSN-6530-01-218-4644)
- Place in an autoclavable pan for transporting and autoclaving.
- Add 50 ml water to the autoclave bag BEFORE closing, secure with autoclave tape, but not air-tight
- Waste must be processed for 60 minutes at a minimum 121° Centigrade
- Allow bags to cool, discard bag and contents: use the Disposable Labware & Broken Glass box;  
**Don't discard autoclave biohazard bags in the general waste dumpster (place in MPW boxes)**
- Chemical indicator should be included in every run to ensure adequate sterilization

**Note: Autoclaves must be maintained to manufacture specification and validated monthly**



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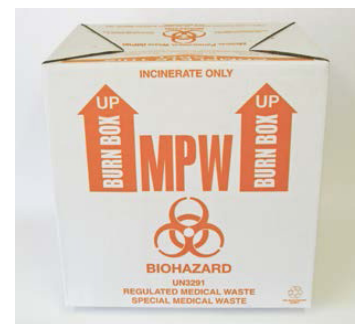


# Medical Pathological Waste (MPW)

Use MPW Box Kit  
ONLY for MPW

## The MPW Box (“Burn Box”)

- The MPW box kits (five boxes, ten bags, and plastic bag closure ties) are available from the NIH Self-Service Store and NIH Stock Catalog (NSN-8115-00-L04-0680). **Use 2 bags per box for double containment**
- The MPW box **MUST NOT** be used for disposal of general waste such as soda cans, papers, cardboard, bottles, etc., or for storage or moving laboratory equipment, office equipment, or household items
- The MPW box **MUST NOT** contain free liquids
- Only use the two black plastic bags that come with the MPW box
- Only use NIH authorized MPW box. Please contact DEP (301) 496-7990 for any questions and concerns



## Packing Procedure

**Pathological waste (tissues and carcasses) MUST be packaged separately from other MPW to avoid odors and sanitation problems**

1. Fold the flaps down on the outside of the box.
2. Place TWO plastic bags (one inside the other) into the box and pull the bag tops down over the flaps
3. A filled MPW box should weigh NO MORE than 40 pounds or be no more than 3/4 full
4. Close each bag SEPARATELY. Twist plastic bag at the top, bend the twisted portion to form a loop, and seal using the plastic bag closure tie
5. Close the box. Fold Flap A down into the box, fold the B Flaps over Flap A, push Flap C down to lock with Flap A
6. PRINT your building, room number, and waste type (pathological or non-pathological) on the box top label area



“Sharps” (needles,  
syringes, scalpel/  
razor blades,  
microfine pipette tips,  
etc.)

## Waste Management Procedures

- Do not recap, bend, remove, or clip needles
- Place intact needles and syringes in the sharps container:  
(small: NSN-6530-01-294-2865; medium: NSN-6530-01-274-5099). **Do not use large sharps containers that may not fit in an MPW Box**
- Fill 3/4 full, snap the lid closed, and discard container in an MPW box
- Do not compress or pack down materials in container
- Items or apparatus that require a large sharp box, please contact DEP for the guidance (E.g., Da Vinci Surgical Apparatus).
- Contact DEP for assistance for safe and proper disposal of sharps (needles & syringes) for personal use at work.



## Labware

- Chemical decontamination
  - Submerge the labware for 30 minutes in an appropriate disinfectant solution
  - Collect disinfectant solution as chemical waste. **It is prohibited to discard the disinfectant solution down the sink drain**
  - Discard labware in Disposable Labware & Broken Glass box
  - If glassware/labware cannot be chemically decontaminated, it must be autoclaved to decontaminate

Cell Culture Media,  
Blood and Body Fluids  
or Solid Media

- All materials contaminated with agents used BSL-2, or lower practices must be packed in a clear autoclave bag. Autoclave or chemically decontaminate and transfer into disposable labware box/solid waste.
- All materials contaminated with agents used at BSL-3 or BSL-2/3 practices must be packed as MPW after decontamination
- Decontaminate chemically or by autoclaving.
- For chemical decontamination, use an appropriate chemical decontaminant following manufacturer’s directions
  - Let stand for 30 minutes
  - Decontaminated fluid must be collected as chemical waste and called for pick up by Chemical Waste Services
  - Dispose of empty decontaminated cell culture vessel in Disposable Labware & Broken Glass box

## MPW Totes Program

- DEP has started a new MPW Totes program for the NIH animal facilities, which allows collecting a larger volume of medical pathological waste and thus reducing the frequency of waste collection pickups. In addition, this program provides a cost savings to the institute through the elimination of MPW box purchases as well as incineration cost savings via reduced MPW weight. Please contact DEP for more information.

## MPW Collection Services

### Building 10

- Packaged and labeled MPW from laboratories and patient care areas are to be placed in corridors for collection by the medical waste contractor 7:30 a.m. – 2:30 p.m. Seven days a week

### Building 10C, ACRF, Animal Facilities in Building 10

- Packaged and labeled MPW will be picked up from the 10C elevator lobby 7:30 a.m. – 2:30 p.m. Seven days a week

### Animal Facilities in Building 14 A, D and E

- Packaged and labeled MPW will be picked up from the 14 A,D and E alleyway 7:30 a.m. – 2:30 p.m. Seven days a week

### Other NIH Buildings on Campus, including Animal Facilities

- Take packaged and labeled MPW, as specified in packaging procedures above, to building loading dock or designated cold room 7:30 a.m. – 2:30 p.m. Monday through Friday (except holidays)

### NIH Buildings off Campus

- Packaged and labeled MPW, as specified in packaging procedures above, to building loading dock or designated cold room Collected on scheduled days

**NOTE: After 2:30 p.m., Monday through Friday, weekends or holidays, MPW boxes should be stored in an appropriate refrigerator or freezer until disposal is available.**



# NIH Recycles: Reduce, Reuse & Recycle

## Web Page

## Containers

## Please Rinse

## Do Not Recycle

## Green Procurement

**General Information** - Contact the Recycling Coordinator at (301) 402-6036 or (301) 496-7990

- Check the [NIH Recycles web page](#) and the [NIH Environmental Management System web page](#) for additional updated information

- All recycling containers will be identified by the blue and green NIH recycling logo and information about the specific material that can be recycled in the container. Call (301) 402-6349 to request additional containers.

- Please rinse food/beverage containers before placing into the recycling container

- Material contaminated with food products, infectious material, hazardous chemicals, radioactive materials, or empty containers previously containing infectious material, hazardous chemicals, or radioactive materials
- Other materials which are not recyclable: Pyrex glass labware, polystyrene, glass slides, window or sheet glass

### Information on Green Purchasing

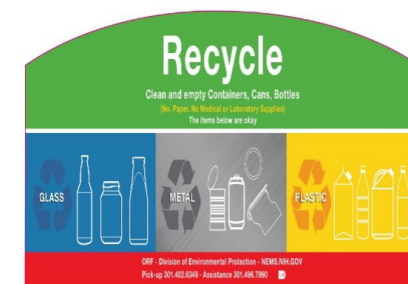


## What Can I Recycle?

Recycling Info Call  
(301) 402-6036  
or (301) 496-7990



Reduce ~ Reuse ~ Recycle



### All paper products

Newspaper, magazines, scientific journals, catalogs, Post-It notes, manila folders, envelopes, tissue and paper towel boxes only – **(NO tissues or towels)**, white or colored paper, frozen food boxes, and all paperboards recycled in the Mixed Paper bins



# What Can I Recycle?

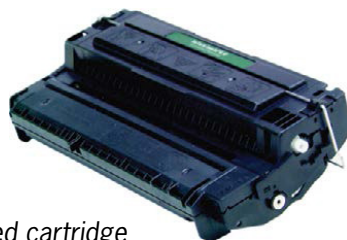


**Container, Can, Bottle (Commingled) Recycling**  
(Empty aluminum cans and foil, all plastic bottles and containers - #1, 2, 3, 4, steel and tins cans, and containers).

**No Laboratory Bottles, Medical Plastics, Plastic Wrap or Bags, Utensils, Chip Bags, Food Wrappers, Foam, Yogurt containers, Prescription bottles, Aerosol Cans, or glass bottles and jars**  
Recycle in Commingled bins



**Printer & Copier Toner Cartridges**  
Recycle in Toner/Injet Cartridge bin.  
NIH Charities receive \$1 for each recycled cartridge



**Pipette Tip Racks and Plastic #5**  
Recycle in Pipette Tip Rack bin.  
The plastic is reused for flowerpots



**Electronics**  
(Computers, monitors, laptops, flash drives, keyboards, memory cards, and hard drives)  
Call Personal Property Services at (301) 496-4247 for collection.



**All Batteries**  
Call (301) 496-4710 for collection. For UPS Batteries see Chemical Waste Section



**Construction Debris**  
(wood, metal, plastic, cardboard, drywall, dirt, ceiling tile, carpet, and concrete) Project Officers submit a Site Selection Request Form for a dumpster. [Additional information on construction debris](#), call (301) 496-7990 with questions.



**Cardboard Recycling**  
Flatten cardboard and place them next to general recycling bins OR on loading docks in cardboard recycling bins.



**Wooden Shipping Pallets**  
Call (301) 496-7990 for collection from loading docks.

**Pre-consumer Food Scraps Recycling Program:** For more information on setting up a food scraps recycling program at your kitchen or cafeteria, please contact DEP at (301) 496-7990



# General Waste

Material free of any apparent or actual pathological/infectious, radioactive, or hazardous chemical contamination. Note: Some laboratory materials may be decontaminated and then discarded as general waste.

[Waste Minimization and Pollution Prevention Guidance](#)

## MOST GENERAL WASTE CAN BE RECYCLED!

- Decontaminated media or labware
- Pyrex glassware (other glassware can typically be recycled)
- Contaminated animal bedding
- Items heavily covered in food residue

- NEVER use an MPW box to dispose of general waste or confidential materials.
- Items that contain chemical, radioactive materials, or the actual or perceived presence of pathogenic agents-
- “Sharps” (needles, syringes, scalpel blades, etc.). (see [Laboratory Waste Disposal Matrix](#))
- Empty 5 gallon (or larger) plastic or metal containers, such as those used for solvents or paint. (see [Empty Chemical Bottles Recycling Program](#))

### Examples of General Waste That Cannot Be Recycled

### Materials Which Are NOT General Waste

## Waste Management Procedures

- **Reduce, Reuse and Recycle – think recycling first before you trash it!**
- Strive for **ZERO WASTE** where possible.

- Place non-recyclable uncontaminated or decontaminated labware in the Disposable Labware & Broken Glass box (NSN-811-500-N19-2305)
- Before disposal, close box and secure with filament tape
- Glassware/labware that cannot readily be chemically decontaminated should be autoclaved prior to disposal as general waste



- Before disposal, cell culture media must be decontaminated (see [MPW Section](#) for instructions) either by steam autoclave or adding disinfectant directly to vessel or treating pooled spent media
- Decontaminated media must be collected as chemical waste and called for pick up by Chemical Waste Services
- Dispose of empty, decontaminated cell culture vessels in the Disposable Labware & Broken Glass box

- Autoclave (see [MPW Section](#)), then dispose of the bag and solid media into a Disposable Labware & Broken Glass box

- Most contaminated bedding may be decontaminated by autoclaving and disposed of as general waste
- Contaminated animal bedding which cannot be decontaminated by autoclaving must be disposed of as MPW

### Materials Which Are NOT General Waste

### Glass/Plastic Labware

### Liquid Culture Media

### Solid Media

### Animal Bedding

# Waste Collection and Disposal Supplies

Stock Number	Description	Size/Unit	Usage
NSN-8105-00-L04-2610	Bag closures, plastic bag ties	12" long	Seal bags w/animal carcass/bedding
NSN-6530-01-282-6378	Bag, biohazard autoclave w/process indicator	small 8" X 12"	Autoclave MPW/media/labware
NSN-6530-01-142-2255	Bag, biohazard autoclave w/process indicator	medium 19" X 23"	Autoclave MPW/media/labware
NSN-6530-01-218-4644	Bag, biohazard autoclave w/process indicator	large 25" X 35"	Autoclave MPW/media/labware
NSN-8105-01-195-8730	Bag, clear plastic	15" X 24"	Collect chemically contaminated solids
NSN-8115-00-L04-0680	MPW Box Kit (5 boxes, 10 bags, ties)	Kit, 5 boxes	MPW collection and disposal
NSN-8105-01-L04-0681	Replacement bags for MPW boxes, 25-count	19" X 44"	Animal carcasses/tissue/bedding
NSN-8105-00-N20-4150	<b>Replacement bags for MPW boxes, 100-count</b>	37" X 45"	Animal carcasses/tissue/bedding
NSN-8115-00-N19-2305	Box, disposable labware/broken glass	floor	Disposable labware and broken glass
NSN-6530-01-294-2865	Container, puncture-resistant	small	Collect sharps for disposal
NSN-6530-01-274-5099	Container, puncture-resistant	medium	Collect sharps for disposal
NSN-7690-00-833-0318	Label, Caution – radioactive material tape	roll	Identify radioactive material
NSN-7930-00-N20-3088	Sodium hypochlorite ( <b>Mercury Free</b> bleach)	1 gal	Disinfect/inactivate
NSN-7530-00-L07-5985	Tag, Chemical Waste	pack of 10	Identify chemical waste
NSN-7530-00-L07-8835	Tag, Radioactive Waste Pick-up Receipt	Pack of 25	Identify radioactive waste
NSN-7510-00-290-8036	Tape, filament	roll	Close waste bags/seal boxes

## Available from Radioactive Waste Service (301) 496-4451

Description	Size/Unit	Usage
Stepcan	One size	Collect solid radioactive waste
Carboy plastic container	2/5 gallon	Collect aqueous radioactive waste
Mixed waste container	4/10/20 liter	Collect liquid mixed waste

## Available from Chemical Waste Disposal Service (301) 496-4710

Solvent safety cans	3/5 gallon	Collect flammable chemical waste
Liquid waste container	3/5 gallon	Collect chemical waste
Plastic waste pail	5 gallon	Collect solid gels
Funnel with lid closure	3/5 gallon	3/5 gallon
Secondary containment pan rectangular	18" X 26"	Collect spills and overfills
Secondary containment pan round	17" diameter	Collect spills and overfills
Empty chemical bottle tote rectangular	19"x16"x15.5"	Collect empty chemical bottles
Empty chemical bottle tote rectangular	19.5"x15.5"x13"	Collect empty chemical bottles
Empty chemical bottle tote upright	15.25"x11"x19.9"	Collect empty chemical bottles

## Available from Recycling Service (301) 402-6349

Interior metal collection container for recycling "All Paper Products"	37" X 15" X 15"	Collect all paper products, for corridors or office suites
Interior metal collection container for recycling "Commingled Materials"	37" X 15" X 15"	Collect commingled materials, for corridors or office suites
Interior metal collection container for recycling "Toner/Ink Jet Cartridges"	37" X 15" X 15"	Collect Toner/Ink Jet, copier cartridges, for corridors or office suites
Interior metal collection container for recycling "Pipette Tip Racks"	37" X 15" X 15"	Collect pipette tip racks
Large cardboard collection container for paper recycling in copy rooms	30" X 24" X 20"	Collect all paper products
30 cubic yard dumpster for construction debris recycling	30 yard open dumpster	Collected mixed construction debris for building renovation projects

Hamper for office clean out



Collect all paper products from office clean out

