DHHS, NIH, ORF and ORS

NIH Waste Disposal Guide

Version 1

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

Up to date information can be found at: http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal

Chemical Waste

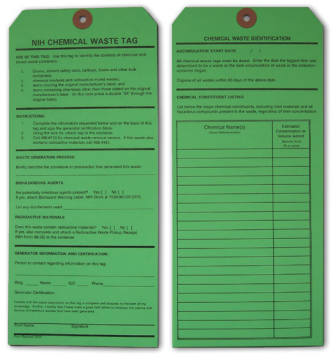
Examples of Chemical Waste

Nonradioactive chemical solids, liquids, gases, or other waste types contaminated with hazardous chemicals. ***For Waste Minimization and Pollution Prevention guidance go to:*** **http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/chemicalwaste.htm**

- Non-radioactive lead shielding and lead scrap
- Spent waste solutions
- Used oil of all types
- All types of batteries
- Formalin solutions
- Fluorescent light tubes
- Photographic film processing solutions and x-ray film
- Empty containers (such as drums, solvent bottles and ethanol cans)
- Broken thermometers and other items containing mercury
- Cytotoxic agents & prescription drugs (non-controlled substances)
- Non-returnable gas cylinders and lecture bottles (18-inch length maximum)
- Agarose gels contaminated with ethidium bromide, acrylamide or other contaminants

General Information

Tag and Identify



- Use Chemical Waste Tag (NSN-7530-00-L07-5985) from the Self-Service Store/NIH Stock Supply Catalog
- When completing the Chemical Waste Tag, identify all major constituents and hazardous components by chemical name, (Don't use acronym or brand name)
- Complete information on front and back of tag

Don't 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
- Oxidizers with organic compounds, flammable, combustible, and reducing agents (e.g. zinc, alkaline metals)
- Aqueous wastes with organic solvents
- Inorganic acids with: Organic, flammable and combustible materials
  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

For additional information on chemical segregation go to:
http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/chemicalwaste.htm

Store Safely

- Store in laboratory while awaiting pick-up.
  DO NOT PUT WASTE CONTAINERS IN HALLWAYS OR OTHER PUBLIC LOCATIONS
- 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)
- 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**

Disallowed Actions and Disposal Methods in Laboratories

- Discarding chemical waste via sinks, in MPW boxes, or in general trash
- Discarding radioactive materials, oxidizers, heavy metals, phenols, acids, and bases in flammable solvent safety cans
- Treating chemical waste in any manner, including use of ethidium bromide filters
- Disposing of volatile chemicals through evaporation

Waste Minimization and Priority Chemicals Reduction

NIH seeks to support Federal initiatives to restrict the purchase and use of specific toxic chemicals by employing sound waste minimization techniques and affirmative procurement strategies. For priority chemical reduction strategies go to: **http://nems.nih.gov**

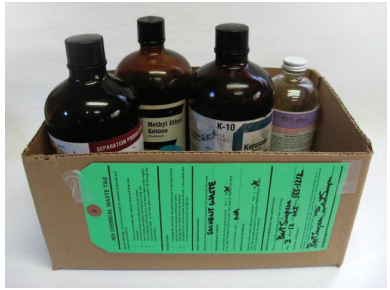
Waste Management Procedures

Chemical Waste Collected in Empty Chemical Bottles

- Empty chemical bottles may be used to collect small quantities (<2 gal) of chemical waste
- Mark **XXX** through the existing bottle label with a black marker
- A completed chemical waste tag is required for each bottle prior to pick-up by the Chemical Disposal Service

Multiple Containers of Chemical Waste

- Multiple containers of compatible chemicals may be placed in a single box for disposal
- The contents of each container must be identified
  - If waste is in original container write the word "WASTE" on the bottle and the date
  - If the waste is not in original container complete and attach a chemical waste tag
  - For boxes containing only waste in original containers attach a chemical waste tag to the outside of the box. Complete generator information and certification
- Do not stack chemical containers on top of one another
- Do not seal box



Larger Volumes (>2 Gallons) of Aqueous Mixtures Containing Organic Compounds

- Combine only compatible chemicals in a container. ***For information on chemical compatibility go to:*** **http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/chem_compat.htm**
- Examples of waste that can be placed in these containers include formalin, phenol, chloroform, and aqueous liquids with trace organics. ***For more information on what goes in these containers go to:*** **http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/chemicalwaste.htm**
- 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 the concentration or volume
- Store waste containers in secondary containment pans away from ignition and heat sources

Flammable Liquids

- Use only the safety cans provided by the Chemical Disposal Service, (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 or volume
- Examples of waste that can be placed in these containers include DNA/HPLC wastes, alcohols, xylenes, acetonitrile and organic solvents
- Contents of safety can should not exceed "fill" line on can
- HPLC users can request containers with special fittings to connect to the HPLC machine, (301) 496-4710
- Do not place radioactive materials, inorganic/organic acids, bases or metallic compounds in these containers
- Store waste containers in secondary containment pans away from ignition and heat sources

Chemically Contaminated Dry Waste

- **DO NOT PLACE radioactive materials, infectious wastes, liquids, sharps or broken glass with this waste**
- Place materials in a clear plastic bag (medium: NSN-8105-01-195-8730; large: NSN-8105-00-826-6468)
- 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: contaminated gloves, pipette tips, absorbent paper, and disposable labcoats

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Chemical Waste

Chemically Contaminated Agarose Gels

- Polyacrylamide or any gel contaminated with ethidium bromide, or other stains must be collected as chemical waste
- Do not dispose of gels in MPW boxes
- Gels can be collected in a lined box or 5 gallon pail with liner
- To order a 5 gallon pail container call the Chemical Disposal Service, (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 contaminents

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 isopropyl ether, ethyl ether, picric acid, hydrides of sodium, lithium and alkaline metals

***For more examples go to:* http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/chemicalwaste.htm**

Disposal of Narcotics and Controlled Substances

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

Laboratory Moves - Transferring Chemicals

- 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

***For more information go to:* http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/chemicalwaste.htm**

Empty Chemical Bottles

Empty bottles can be disposed in several ways:

- Empty bottles can be recycled if collected by the Chemical Disposal Service. Leave cap on the empty bottle
- Rinse and collect the rinsate in a chemical waste container. Clean bottle can then be disposed as general solid waste in a Disposable Labware and Broken Glass box
- Empty bottles can also be reused to collect small quantities of chemical waste. (See **Waste Management Procedures**)
- Do not place empty bottles into or around recycling collection bins

Formalin/Aldehyde Solutions with Tissue, Human and Animal Parts

Formalin/Aldehyde solutions containing tissue, human and animal parts can be disposed in two ways:

- Separate the tissue from the formalin or formaldehyde solution; dispose of the liquid through chemical disposal service; dispose of the tissue in **MPW box**. (See **MPW Section**) or;
- Solidify the formalin/formaldehyde solution containing tissues by adding Aldex crystalline (powder-based) formula. Aldex is available commercially, call DEP for more information, (301) 496-7990
- Dispose of the solidified material in **MPW box**. (See **MPW Section**)

Batteries

- UPS (uninterruptible power source) batteries must be removed from the UPS casing prior to 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

Light Tubes, Lamps, and Devices/ Equipment Containing Mercury

- Examples are fluorescent light tubes, compact fluorescent light tubes, mercury and sodium vapor lamps, Ultaviolet and HID (high-intensity discharge) lamps, thermometers, and thermostats
- These devices contain mercury and must be managed as chemical waste
- ORF facility maintenance is primarily responsible for the replacement and management of spent tubes. Call (301) 435-8000

***For information on NIH's Mercury Abatement Program go to:* http://orf.od.nih.gov/Environmental+Protection/Mercury+Free/**

Multihazardous Waste

Multihazardous waste is waste containing 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 chemical component and radioactive material regulated by the NRC. "Mixed Waste" is a subset of multihazardous waste. ***For Waste Minimization and Pollution Prevention guidance go to:*** **http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/multiwaste.htm**

Examples 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 <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 Pick-up 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 pick-up.

Avoid Generating

- Avoid generating multihazardous wastes as disposal can be difficult and expensive. For help in avoiding 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 Inactivate Waste

- Minimize volumes generated if generation of multihazardous waste cannot be avoided
- PRIOR to beginning work activities which 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 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

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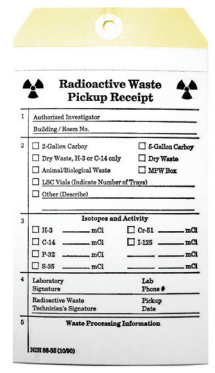
Multihazardous Waste

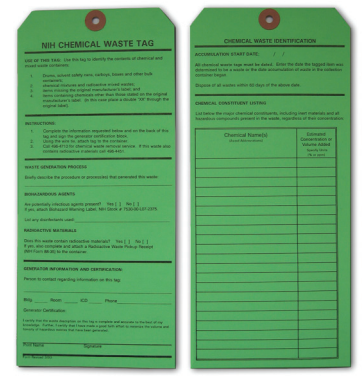
Don't Mix

- 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

Identify and Label

- List on the Radioactive Waste Pick-up 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 and the concentration or volume
- Ensure that all mixed waste containers have a:
  - Caution-Radioactive Material label (NSN-7690-00-833-0318)
  - Radioactive Waste Pick-up Receipt (NSN-7530-00-L07-8835)
  - Chemical Waste Tag (NSN-7530-00-L07-5985)





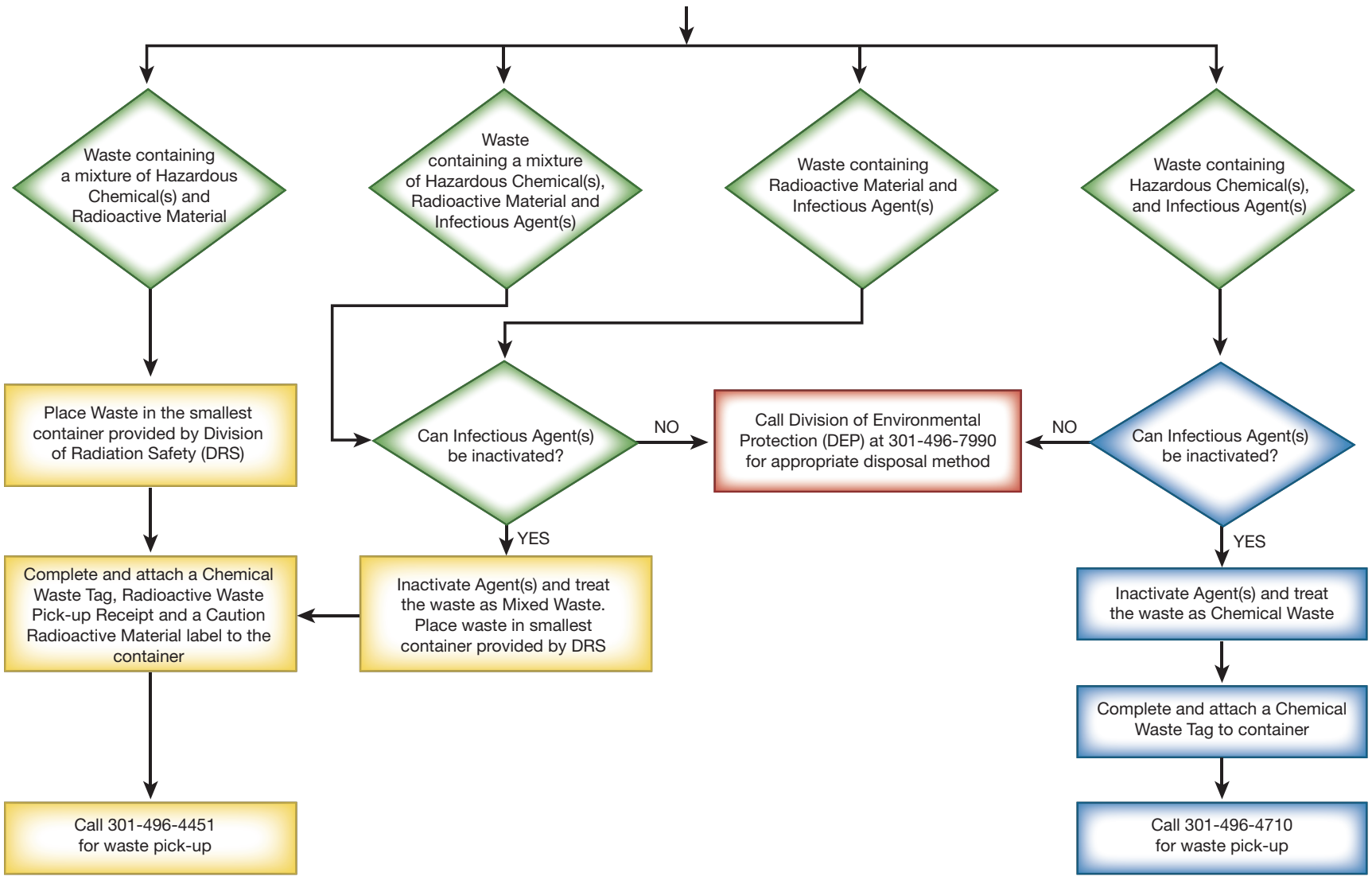
Shielding Requirements

- Shield radioactive material such that:
  - Radiation levels are less than 2 millirem/hour @ 30 cm within a posted laboratory, AND radiation levels are less than 0.5 millirem/hour or will total 50 millirem in a year in any 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 use of radioactive material
- NEVER place mixed waste in corridors – even while awaiting pick-up
- 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



Specific Types of Mixed Waste

Liquid Scintillation Vials

- 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 Pick-up Receipt (NSN-7530-00-L07-8835). Add name of Scintillation Cocktail to Pick-up Receipt
  - Chemical Waste Tag (NSN-7530-00-L07-5985)

Lead Contaminated With Radioactive Material

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

Radioactive Waste

Radioactive waste is any waste that contains or is contaminated with radioactive material

For Waste Minimization and Pollution Prevention guidance go to:
http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/radwaste.htm

Examples of Radioactive Waste

- Aqueous radioactive solutions
- Liquid scintillation counting fluids and vials
- Materials contaminated with radioactive material after inactivation of infectious agents, such as:
  - Animal carcasses and excreta
  - Experimental or spill clean-up materials, absorbent paper, gloves
  - Patient care materials
  - Plastic or glassware

General Information and Assistance

- In the planning stages of your experiment, review disposal procedures with your Area Health Physicist, (301) 496-5774. Radioactive waste containers (stepcan, 2 gallon and 5 gallon carboys) are available by calling Radioactive Waste Service at (301) 496-4451. Radioactive Waste Pick-up Receipts (NSN-7530-00-L07-8835) and Caution-Radioactive Material labels (NSN-7690-00-833-0318) are available at the Self-Service Store. Call (301) 496-4451 or log on to **http://drsportal.ors.od.nih.gov/** to request your radioactive waste pick-up.

Security

- Radioactive waste must be secured or held under constant surveillance to prevent unauthorized removal or access
- Source vials, when not in use, must be stored in a locked container at all times
- Consult your Health Physicist, (301) 496-5774, for more information

Don't Mix

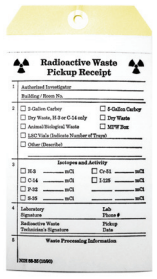
- Liquid waste with dry waste
- Short half-life (< 120 days) with long (> 120 days) half-life waste
- Waste containing chloroform or trichloroacetic acid (TCA) with any other aqueous radioactive waste
- Aqueous solutions with mixed wastes
- For mixed wastes see Don't Mix in Multihazardous Waste Section

Adjust pH

- Aqueous liquid waste solutions should be adjusted to a pH between 6 and 10. Use caution; Call your Area Health Physicist, (301) 496-5774, for assistance

Identify and Label

- List on the Radioactive Waste Pick-up Receipt an estimate of radionuclide(s) and activity present at time of pick-up
- Ensure that all radioactive waste containers have a:
  - Caution-Radioactive Material label (NSN-7690-00-833-0318)
  - Radioactive Waste Pick-up Receipt (NSN-7530-00-L07-8835)



Shielding Requirements

- Shield radioactive material such that:
  Radiation levels are less than 2 millirem/hour @ 30 cm within a posted laboratory, AND radiation levels are less than 0.5 millirem/hour or will total 50 millirem in a year in any 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

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

Waste Management Procedures for Material Contaminated with Radioactive Material

Aqueous Waste

- Do not discard radioactive wastes into sinks 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 container tightly
- Attach a Radioactive Waste Pick-up Receipt (NSN-7530-00-L07-8835)

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 Pick-up 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 and amount on the Chemical Waste Tag

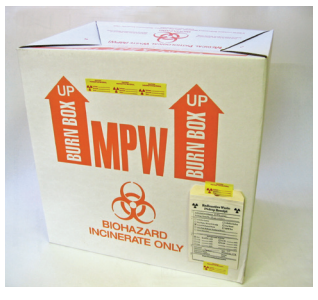
Disposable Labware

- Use bench-size Disposable Labware & Broken Glass box (NSN-8115-01-122-1772)
- 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 Pick-up Receipt (NSN-7530-00-L07-8835)

"Sharps" (needles syringes, scalpel blades/razor blades, pipette tips, etc.)

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

MPW, Patient Care Materials, Animal Carcasses and/or Tissues, Bedding and/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
- 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 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 box top label area
- Clearly affix Caution-Radioactive Material label (NSN-7690-00-833-0318) and Radioactive Waste Pick-up 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

NOTE: Autoclaves must be maintained to manufacture specification and validated monthly

Lead

- Lead which contains or is contaminated with radioactive material is a mixed waste – see Multihazardous Waste Section

Liquid Scintillation Vials

- Vials with hazardous chemical(s) are a mixed waste – see Multihazardous Waste Section
- Segregate securely capped vials according to radionuclide – H-3 and/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 Pick-up Receipt (NSN-7530-00-L07-8835)

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 liner)
  - Affix a Caution-Radioactive Material label (NSN-7690-00-833-0318) to the box
  - Attach a Radioactive Waste Pick-up Receipt (NSN-7530-00-L07-8835)

OtherTypes 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 Pick-up 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/policy/equip_clearance.htm** for guidance on how to surplus Liquid Scintillation or Gamma counters and other laboratory equipment containing internal radioactive sources

Medical Pathological Waste (MPW)

Examples of MPW

***For Waste Minimization and Pollution Prevention guidance go to:* http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/mpw_waste.htm**

Waste must not be contaminated with radioisotopes or hazardous chemicals

- Waste containing or contaminated with infectious or pathogenic agent(s)
- Pathological waste includes: Animal carcasses, anatomical waste (organs, tissue from humans or animals)
- Sharps containers (scalpels, razor blades, Pasteur pipettes, pipette tips, 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 drug(s): Empty cytotoxic drug vials, cytotoxic drug dispensing apparatus, patient care materials, towels, absorbent material, or similar materials

MPW Contaminated with Radioactive Materials or Hazardous Chemicals

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:

Decontaminate

- 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

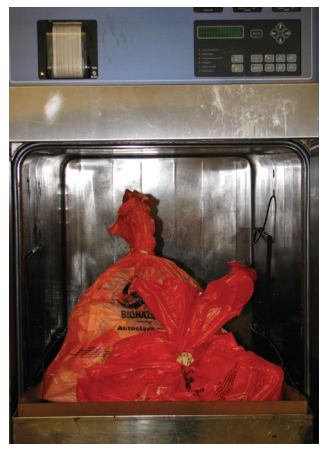
Disinfectants

- Suitable chemical disinfectants include:
  - Sodium hypochlorite (bleach at 5.25%), (**Mercury Free**), 1:10 dilution
  - Wescodyne (NSN-6840-00-526-1129), use according to manufacturer's directions

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

Steam Sterilization/ Autoclave

- 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 autoclaveable pan for transporting and autoclaving
- Add 50 ml water to the autoclave bag BEFORE closing, secure with autoclave tape
- Waste must be processed for 60 minutes at **minimum** 121° Centigrade
- Cool, discard bag and contents: Use the Disposable Labware & Broken Glass box;
- **Autoclaves must be maintained to manufacture specification and validated monthly**



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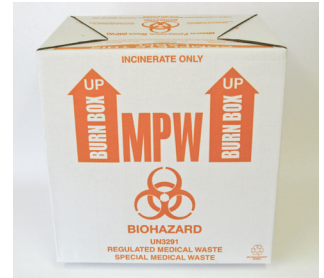
Medical Pathological Waste (MPW)

The MPW Box ("Burn Box")

Use MPW Box Kit ONLY for MPW



- The MPW box kit (five boxes, ten bags, and plastic bag closures ties) is 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

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 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 box top label area

Waste Management Procedures

"Sharps" (needles, syringes, scalpel/ razor blades, pipette tips, etc.)

- Do not recap, bend, remove, or clip needles
- Place intact needles and syringes in the sharps container: (small: NSN-6530-01-196-0284; medium: NSN-6530-00-L03-5923). **Do not use large sharps containers that may not fit in a MPW Box**
- Fill 3/4 full, snap lid closed, and discard container in an MPW box
- Do not attempt to compact contents of containers

Labware

- Chemical decontamination
  - Submerge the labware for 30 minutes in an appropriate disinfectant solution
  - Discard disinfectant down the sink drain followed by copius amounts of water
  - Discard labware in Disposable Labware & Broken Glass box
  - If glassware/labware cannot be chemically decontaminated, it must be autoclaved to decontaminate

Cell Culture Media or Blood and Body Fluids

- 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 may be discarded into a sink drain followed by copius amounts of water
  - Dispose of empty decontaminated cell culture vessel in Disposable Labware & Broken Glass box

Solid Media

- Autoclave as described above

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.-4:00 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.-4:00 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	• Take 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

General Information - Contact the Recycling Coordinator at (301) 496-6036

Web Page

- Check the NIH Recycles web page **(http://www.nems.nih.gov, http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/recycling.htm)** for additional and updated information

Containers

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

Please Rinse

- Please rinse food/beverage containers before putting in recycle container

Do Not Recycle

- 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

Green Procurement

For information on Green Purchasing go to: http://orf.od.nih.gov/Environmental+Protection/Green+Purchasing/

What Can I Recycle?

Recycling Info – Call (301) 496-6036

Reduce ~ Reuse ~ Recycle

WHAT CAN I RECYCLE?

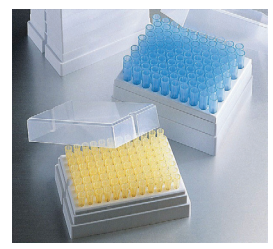
All paper products
(Newspaper, magazines, scientific journals, catalogs, binders, Post-It notes, manila folders, envelopes, tissue and paper towel boxes - no tissues or towels, white or colored paper, frozen food boxes, and all paperboard)

Recycle in All Paper Products bin

Commingled Recycling
(Aluminum cans and foil, all plastic bottles and containers - #1, 2, 3, 4, 5, 6, and 7 - yogurt containers, steel and tin cans, glass bottles and jars, buffer and saline bottles, prescription bottles, food storage bags and containers, plastic utensils and plastic bags)

Recycle in Commingled bins

Printer & Copier Toner Cartrid
Recycle in Toner/Ink Jet Cartri



Pipette Tip Racks and Plastic #5
Recycle in Pipette Tip Rack bin

Electronics
(computers, monitors, laptops, flash drives, keyboards, memory cards and hard drives)
Call Personal Property Services at (301) 402-6279 for collection

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

Construction Debris

Wooden Shipping Pallets

ACS Plastic Resin Codes

1	2	3	4	5	6	7
PETE	HDPE	PVC	LDPE	PP	PS (Non-Styrofoam)	OTHER

Recycling **Pick-up: 301-402-6349** **Assistance: 301-496-7990**

General Waste

Material free of any apparent or actual pathological/infectious, radioactive or hazardous chemical contamination.
Note: Some laboratory material may be decontaminated and then discarded as general waste.
For Waste Minimization and Pollution Prevention guidance go to:
http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/generalwaste.htm

MOST GENERAL WASTE CAN BE RECYCLED!

Examples of General Waste That Cannot Be Recycled

- Decontaminated media or labware
- Pyrex glassware (other glassware can typically be recycled)
- Uncontaminated animal bedding
- Styrofoam or any polystyrene type materials
- Food contaminated items that cannot be decontaminated

Materials Which Are NOT General Waste

- NEVER use an MPW box to dispose of general waste or confidential materials
- Items which contain chemical, radioactive materials or the actual or perceived presence of pathogenic agents
- "Sharps" (needles, syringes, scalpel blades, etc.) – see MPW Section
- Empty 5 gallon (or larger) plastic or metal containers, such as those used for solvents or paint – see Chemical Waste Section

Waste Management Procedures

Office or Lab Waste

- **Reduce, Reuse and Recycle – think recycling first before you trash it!**
- Strive for **ZERO WASTE** where possible. For more information go to: **http://nems.nih.gov/aspects/waste/programs/recycling.cfm**

Glass/Plastic Labware

- Place non-recyclable uncontaminated or decontaminated labware in the Disposable Labware & Broken Glass box
- Close box and secure with filament tape
- Glassware/labware that cannot readily be chemically decontaminated should be autoclaved prior to disposal as general waste

Liquid Culture Media

- Before disposal, cell culture media must be decontaminated (see MPW page for instructions) either by steam autoclave or adding disinfectant directly to vessel or treating pooled spent media
- Decontaminated media may be discarded into a sink drain
- Dispose of empty, decontaminated cell culture vessels in the Disposable Labware & Broken Glass box

Solid Media

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

Animal Bedding

- 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
- Uncontaminated animal bedding should be disposed in general waste, not as MPW

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-8105-00-826-6468	Bag, clear plastic	30" X 40"	Dispose of chemically contaminated solid
NSN-8105-01-195-8730	Bag, clear plastic	13" X 24"	Collect chemically contaminated solids
NSN-8115-00-L04-0680	MPW Box kit	5 boxes,	10 bags & ties MPW collection and disposal
NSN-8105-41-044-5727	Replacement bags for MPW boxes	19.5" X 44.5"	Animal carcasses/tissue/bedding
NSN-8115-01-122-1772	Box, disposable labware/broken glass	bench	Disposable labware and broken glass
NSN-8115-01-154-2305	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-7530-00-L07-2375	Label, Biohazard	1'X 3'	Warning of biohazard material
NSN-7530-00-L07-2376	Label, Biohazard	2.2" X 3.5"	Warning of biohazard material
NSN-8135-01-025-2532	Pads, absorbent paper	18" X 20"	Absorb residual liquids
Call DEP, 301-496-7990	Sodium hypochlorite (**Mercury Free** bleach)	1 gal	Disinfect/inactivate
NSN-6840-00-526-1129	Wescodyne povidine-iodine based solution	bottle	Disinfect/inactivate pathogen(s)
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	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 containers	
Secondary containment pan rectangular	18" X 26"	Collect spills and overfills
Secondary containment pan round	17" diameter	Collect spills and overfills

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
Small desktop contain for paper recycling	12" X 9" X 6"	Collect all paper products
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