

Waste Disposal Procedures

(EHS Program Manual 5.2)



1.0 Overview

Weill Cornell Medicine research, clinical, service, maintenance, and cleaning operations generate several types of waste (chemical, biological, radioactive, universal, and recyclable).

Waste must be adequately managed by personnel (“generators”) in their work areas prior to collection and/or disposal.

Environmental Health and Safety (EHS) at Weill Cornell Medicine (WCM) has developed this Waste Disposal Program Manual to instruct generators in the proper management of chemical, biological, and universal wastes. The Office of Health Physics manages and provides guidance on the disposal of radioactive wastes. Special consideration must be taken when wastes consist of mixtures of chemical, biological, and/or radiological materials (“mixed wastes”). Generators must ensure these mixed wastes are correctly assessed, managed and disposed of as required by the chemical, biological, and radiological waste management procedures.

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3.0 Objectives

This manual aims to inform and provide clear guidance to the Weill Cornell Medicine (WCM) community about the proper disposal of chemical, biological, radiological, and universal wastes.

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4.0 Applicability

This procedure applies to WCM students, faculty, staff, and volunteers working at Weill Cornell who generate and dispose of the wastes identified in this procedure.

5.0 Responsibilities

5.1 WASTE GENERATORS

WCM students, faculty, staff, and volunteers who handle or use chemical, biological, radioactive, and/or universal waste (e.g., batteries, computers) materials have a responsibility to ensure wastes of these materials are properly disposed of.

Waste generators need to be informed and to ensure that wastes meet the following requirements:

- Adequately classified as chemical, biological, radiological, universal waste, or a mixture of waste types;
- Treated or decontaminated, if required; and
- Managed and disposed of as detailed in this procedure.

Following these guidelines will ensure the wastes are disposed safely and in compliance with Federal, State, and local regulations within proper disposal locations where they cannot cause harm and injury to waste generators, others, or the environment.

All waste must be disposed of according to the Waste Disposal Procedures. If any of this information is unclear, contact Environmental Health and Safety (EHS) before disposing of waste. Instructions will be provided to you specifically covering your waste.

5.2 ENVIRONMENTAL HEALTH AND SAFETY (EHS)

Environmental Health and Safety responsibilities include:

- Developing and maintaining waste disposal procedures which comply with Federal, State, and local regulations.
- Educating and training the WCM community about these waste disposal procedures.
- Providing assistance and technical guidance on the proper disposal of chemical, biological, radiological and universal wastes.
- Inspecting and auditing College activities to ensure that waste storage and disposal practices are consistent with these procedures.
- Administration and management of radiological material reception, storage, handling, and use; and radioactive waste disposal procedures.

5.3 HOUSEKEEPING

WCM Department of Housekeeping duties include:

- Nightly collections of regular trash and biological waste red bags from within the generators work area.
- Collections of surplus electronics for recycling in WCM Housekeeping supported facilities.

6.0 Chemical/Hazardous Waste Management

Chemical wastes are generated from the disposal of old stock chemicals or byproducts of work activities.

Unless another specific chemical waste disposal procedure is identified in this manual, chemical wastes must be managed as a hazardous waste as outlined in this section and provided to EHS for disposal.

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6.1 SPECIFIC CHEMICAL WASTE DISPOSAL PROCEDURES

Specific waste disposal procedures exist for the following categories of chemical wastes. If the waste meets any of these categories, refer to the corresponding Specific Disposal Procedure in this manual.

- Drain and Trash Disposal (for non-hazardous chemicals)
- Acutely Toxic Chemical Waste (for sharps and empty containers)
- Sharps Waste (for non-acutely toxic or odiferous chemical waste)
- Empty Containers
- Ethidium Bromide/Electrophoresis Gels and Solutions
- DEA Controlled Substances
- Mercury Lamps and light bulbs
- Battery Recycling and Disposal
- Computers/Surplus Electronics Recycling
- Photographic Waste (Silver) Management
- Scrap Lead Recycling
- Unknowns

6.2 HAZARDOUS WASTE DISPOSAL PROCEDURES

1. **Select Waste Containers:** Generators of chemical wastes must use appropriate waste containers. It is acceptable to reuse empty bottles to collect chemical wastes.

- Containers must be compatible with the waste chemicals. Caution and consideration must be taken for solvent and corrosive wastes to ensure the waste contents will not melt or dissolve the waste container.
- Container lids must be closed and secure (i.e., screw type lid) any time that waste is not being added to them. Stoppered bottles or use of paraffin wax to seal containers is not acceptable. Vented caps are acceptable for gas producing waste (i.e., Aqua regia, piranha solution.)
- Separate containers must be used to collect unique or incompatible waste types.

2. **Label Immediately:** The “**HAZARDOUS WASTE**” label (see image) must be placed on each chemical waste container.

- Apply the label when the first drop of waste is added to the container.
- Write the Full Chemical Name for each specific chemical component.
- Non-specific wording such as “organic waste”, “running buffer” or “Solution A” on a label is not acceptable.
- Check the appropriate Globally Harmonized System of Classification and Labeling of Chemicals (GHS) pictograms for each hazard present in the waste container.

Figure 1: Hazardous Waste Label

<h1 style="margin: 0;">HAZARDOUS WASTE</h1> <p style="margin: 0;">Weill Cornell Medicine</p>	
Contact Name:	Contact Number:
Principal Investigator:	
Hazard Characteristics (check all that apply):	
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-around; font-size: 0.8em;"> Flammable Corrosive Toxic Reactive Health Hazard Other </div>	
Chemical Name(s):	
<small>For assistance, contact Environmental Health and Safety 646-962-7233 ehs@med.cornell.edu https://ehs.weill.cornell.edu</small>	

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- To determine the hazards associated to the waste, please refer to the original reagent container labels and/or the Safety Data Sheet (SDS).
- Refer to the hazardous waste definition in section 6.5 in this document:
 - Flame pictogram for flammable liquids and solids
 - Corrosion pictogram for corrosive substances
 - Skull & crossbones pictogram for toxic substances
 - Exploding bomb pictogram for unstable and/or reactive chemicals
 - Health hazard pictogram for non-acutely hazardous substances

— Self-adhesive Hazardous Waste labels are available from EHS free of charge. Printer-friendly labels are also available on [the EHS website](#).

- 3. Close Container:** Chemical waste containers must be closed when not in “active” use to prevent spills or releases to the environment (e.g., volatilization of solvent wastes to the air). The Environmental Protection Agency (EPA) has clarified: if waste has not been placed into or entered the container within the past 10-15 minutes, the container is not being actively used and must be closed. The lid must be fully closed or sealed to prevent releases (e.g., no stoppers or Parafilm).

- 4. Store in CWSAA:** Chemical waste containers must be stored in the Chemical Waste Satellite Accumulation Area (CWSAA) at all times except when waste is being “actively” filled. Refer to [Section 6.3- Chemical Waste Satellite Accumulation Area Requirements](#).

— Utilize secondary containment to hold potential spills from containers.

— Segregate incompatible wastes (e.g., oxidizers from flammables).

- 5. Mixed Waste Assessment:** Assess whether the chemical waste is mixed with biological and/or radioactive wastes.

— Biological Mixed Waste: First decontaminate the biological hazard. Refer to Biological Waste Management Procedures.

— Radioactive Mixed Waste: Follow Radioactive Waste Disposal Procedures.

- 6. Chemical Waste Collection Request:** Submit a Chemical Disposal Request via [Salute](#) to initiate a chemical collection. Chemical collections occur every Tuesday and Thursday of the week; chemicals will be collected within 3 business days of submittal at no charge to the generator.

6.3 CHEMICAL WASTE SATELLITE ACCUMULATION AREA (CWSAA) REQUIREMENTS

A Chemical Waste Satellite Accumulation Area (CWSAA) is a designated area within the laboratory/work area where chemical waste is stored until it is collected by EHS. This area can be a small section of a chemical hood, bench top, cabinet or any combination, depending on storage requirements, which must be under the control of the generator. Certain conditions must be met to maintain this designation.

6.3.1 CWSAA Posters

All CWSAAs must be designated with a Chemical Waste Satellite Accumulation Area poster ([Appendix C](#)). Contact EHS to obtain a copy of the poster, or you can print out the CWSAA poster. The poster contains a QR code to EHS’s webpage which contains links to [Salute](#), required for chemical pickup from EHS.

6.3.2 CWSAA Location

The CWSAA must be at or near the point of waste generation. This means that the waste must remain in the same laboratory/area and cannot be moved through a corridor to a different room for storage.

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6.3.3 CWSAA Storage Limits

Chemical Waste Satellite Accumulation Areas are limited to storing:

- 55-gallons of non-acutely toxic hazardous waste; and
- 1 quart of acutely toxic hazardous waste ([Appendix B](#)).

Contact EHS immediately if these storage limits are exceeded. Wastes must be removed within 3 calendar days of exceeding these storage limits.

6.4 CHEMICAL WASTE SELF-AUDIT PROGRAMS

Chemical waste generators must conduct periodic audits of their chemical waste management practices. A [Chemical Waste Self-Audit Form](#) is available on the EHS website as well as in [Appendix D](#) of this manual to assist chemical waste generators in auditing their practices. Contact EHS with any questions. There is no requirement to save or retain copies of the completed self-audit forms- this form is only an audit tool to assist generators with managing their chemical wastes.

6.5 CHEMICAL WASTE DEFINITIONS

Chemical waste is defined by the United States Environmental Protection Agency (EPA) as a hazardous waste if it exhibits a hazardous characteristic, or the chemical is specifically listed as a hazardous waste that would cause harm to the environment or human health. EHS personnel have received EPA-specific training to make hazardous waste determinations and are available to assist laboratory personnel. For the purpose of chemical waste management at WCM, all chemical wastes that do not have a specialized waste disposal procedure must be managed as a hazardous waste.

6.5.1 Characteristic Hazardous Waste

- **Ignitability:** Vapor or material ignites below 140°F in a closed cup test or is an oxidizer.
- **Corrosivity:** pH values of the waste are less than or equal to 2 (acid) or greater than or equal to 12.5 (basic).
- **Reactivity:** Could cause a fire, explosion, or toxic gases release under certain conditions.
- **Toxicity:** Toxic heavy metals (e.g., arsenic, barium, cadmium, lead, mercury, silver) and organic chemicals (e.g., chloroform, cresols, carbon tetrachloride).

6.5.2 Listed Hazardous Waste

- **“P”-Listed:** List of chemicals the EPA has deemed acutely toxic (e.g., cyanides, epinephrine, osmium tetroxide). [Appendix B](#) contains the full list of EPA-regulated acutely toxic chemicals.
- **“U”-Listed:** List of chemicals the EPA has deemed toxic (e.g., phenol, cyanogen bromide, and xylene).

6.5.3 Stock Chemical

The following are signs of chemicals in inventory which may require disposal. Contact EHS for the collection of unneeded chemicals in a timely manner:

- Change of color, or clarity
- Change of state (e.g., solid to liquid or liquid to solid)
- Expiration date on container label is exceeded
- Inventory or opening dates are several years old
- Accretion of condensation, crusts, or crystals around caps and container surfaces
- Hydrated compounds have lost their water.
- Corrosion, rust, cracked caps on containers
- Tattered, discolored, illegible or missing container labels

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- Inspect your chemical inventory and dispose of any chemicals that meet the descriptions above. Contact Environmental Health and Safety for assistance on disposal.

7.0 Biological/Regulated Medical Waste Management

Biological/regulated medical wastes are generated in diagnosis, treatment or immunization of humans or animals; in research pertaining thereto; or in production and testing of biologicals. Biological wastes may include animal wastes, cultures and stocks, human blood, blood products, tissues, cell lines, body fluids, human pathological waste, recombinant DNA, infectious agents, isolation wastes, and sharps. Refer to [Section 7.4- Biological Waste Definitions](#) for further information and clarification. Unless a specialized biological waste disposal procedure is identified in this manual, biological wastes must be managed as a Regulated Medical Waste sharps or red bag as outlined in this section.

7.1 SPECIFIC BIOLOGICAL WASTE DISPOSAL PROCEDURES

Specific disposal procedures exist for the categories of biological/regulated medical wastes listed below. If the waste meets any of these categories, refer to the Specific Disposal Procedure outlined in this manual. Otherwise, all other biological wastes must be discarded as indicated in this section.

- Biological Waste Liquids (exceeding 100 ml)
- Tissue Culture Vacuum Flask Disinfection and Disposal
- Animal Tissues
- Human Pathological Wastes
- Biosafety Level 3 and Select Agents

7.2 REGULATED MEDICAL WASTE DISPOSAL PROCEDURES

Decontamination (as required): Certain biological wastes require the generator to decontaminate (e.g., autoclave or chemical disinfection) prior to disposal. [Section 7.3 - Biological Decontamination Procedures](#) provides decontamination guidance.

The following biological wastes require decontamination:

- Biological waste liquids to be disposed of via sink drain.
- Infectious agents and recombinant DNA designated BSL2 or higher.
- Biological wastes mixed with radioactive wastes requiring disposal via EHS Health Physics as radioactive waste.
- Biological wastes mixed with hazardous chemical wastes requiring disposal via EHS as chemical waste.

Mixed Waste Assessment: Assess whether biological waste is mixed with hazardous chemical and/or radioactive wastes.

- Biological Mixed Waste: First decontaminate the biological hazard.
- Radioactive Mixed Waste: Follow EHS Health Physics radioactive waste disposal procedures.
- Hazardous Chemical Mixed Waste: If also radioactive mixed waste, dispose of via EHS Health Physics as hazardous chemical and radioactive mixed waste. Otherwise, dispose of as hazardous chemical waste.

Regulated Medical Waste Type: Assess whether a biological waste is a sharps waste or red bag waste.

- Sharps Waste: Follow the Sharps Waste Disposal Procedure. Sharps waste includes any glass, metal, or plastic instruments or items that have the potential to cut, puncture, scratch, or abrade skin, whether it is contaminated or not. Sharps waste includes, but is not limited to:
 - Hypodermic, intravenous or other medical needles
 - Hypodermic or intravenous syringes to which a needle or other sharp is attached
 - Scalpel blades and disposable microtome blades, razor blades

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- Pasteur pipettes and serological pipettes
- Blood vials
- Needles with attached tubing (“butterflies”)
- Culture dishes
- Broken and unbroken glass and plastic ware, including microscope slides and cover slips, in contact with infectious agents.
- Red Bag Waste: Items contaminated with blood, body fluids or other potentially infectious materials including pathological and microbiological wastes. Follow the Red Bag Waste disposal procedures to discard solid, non-sharps waste such as:
 - Kimwipes
 - Pads
 - Gloves
 - Intact plastic ware contaminated with biological materials.

7.3 BIOLOGICAL DECONTAMINATION PROCEDURES

7.3.1 Bleach Disinfection of Biosafety Level 1 and 2 Liquid Waste

Effectiveness: Bleach, a sodium hypochlorite solution (NaOCl), is a broad-spectrum disinfectant that is an effective disinfectant for:

- Enveloped viruses (e.g., HIV, HBV, HSV).
- Vegetative bacteria (e.g., Pseudomonas, Staphylococcus, and Salmonella)
- Fungi (e.g. Candida)
- Mycobacterium (e.g., M. tuberculosis and M. bovis)
- Non-enveloped viruses (e.g., Adenovirus and Parvovirus)

Personal Protective Equipment (PPE): Refer to the disinfectants Safety Data Sheet (SDS) for additional PPE and safe handling and use information.

- Laboratory coat
- Latex or nitrile gloves
- Safety glasses

Concentration: The appropriate concentration of sodium hypochlorite for disinfecting liquid BSL1 and BSL2 waste (e.g., supernatants from cell culture) is 5000 ppm, approximately 0.5%. Household bleach is 5.2 - 6.1 % sodium hypochlorite; therefore, a 1:10 (v/v) dilution of bleach to liquid biological waste is appropriate.

Contact Time: An appropriate contact time of sodium hypochlorite with liquid waste is 30 minutes or overnight before disposal.

Drain Disposal Assessment: Assess and verify chemical constituents meet drain disposal requirements. Refer to specific Drain Disposal Procedure for additional information.

- **Acceptable:** If acceptable for drain disposal and after 30 minutes of contact time, disinfected liquid waste is poured down the sink and flushed with copious amounts of water.
- **Not Acceptable:** If not acceptable, collect and manage waste as chemical waste and provide to EHS for disposal.
- **Stability and Storage:** Bleach must be stored between 50°F and 70°F. According to Clorox, undiluted household bleach has a shelf life of six months to one year from the date of manufacture. After this time, bleach degrades at a rate of 20% each year, until completely degraded to salt and water. A 1:10 bleach solution has a shelf life of 24 hours. Some

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manufacturer-prepared 1:10 bleach solutions, e.g., Bleach-Rite, contain a stabilizer that increases the shelf life to approximately 18 months.

7.3.2 Autoclaving Procedures for Biosafety Level (BSL) 1 and 2 Liquid Waste

Effectiveness: Autoclaving is an effective means of sterilizing BSL1 and BSL2 liquid waste. Sterilization refers to the complete killing of all living organisms, including spores. The autoclave is periodically validated for effectiveness by using a biological indicator (e.g., *Geobacillus stearothermophilus* spores).

All autoclave operators must receive training on safety practices prior to using the equipment. Training may be delegated to a qualified individual, but it remains the responsibility of the supervisor to ensure their personnel is adequately trained.

Training requirements may include annual completion of Laboratory Safety or Clinical Safety programs, depending on the department.

Detailed information on [Autoclave Safety](#) is available on the EHS website.

7.3.2.1 Personal Protective Equipment (PPE)

Wear suitable personal protective equipment when loading, operating or retrieving materials from an autoclave:

- Standard PPE: Closed-toed shoes, lab coat, safety glasses, and heat-resistant insulated gloves.
- When Autoclaving Liquids: Standard PPE plus face shields, liquid-resistant apron, and sleeves.
- When Autoclaving Sharps: Standard PPE plus cut-resistant gloves when removing items from the autoclave.

7.3.2.2 Restrictions on Autoclave Use

Autoclaves shall **not** be used for:

- Treatment of regulated medical waste containing or mixed with hazardous chemical waste and/or toxic drug waste; such as corrosives (e.g., acids, bases, phenol, etc.), solvents (e.g., ethanol, methanol, chloroform), or radioactive materials.
- Vertebrate animal carcasses: should be disposed of via the Research Animal Resource Center (RARC).
- Treatment of recognizable human body parts.

7.3.2.3 Autoclave Procedure

- Collect BSL1 and BSL2 liquid waste in autoclavable, leak-proof containers that are never more than $\frac{3}{4}$ full.
- Place containers in an autoclavable tray in the autoclave. Loosen each container top and place indicator tape on each top.
- Adequate cycle time varies depending on load, type of autoclave, and secondary containment. Based on spore testing, determine the appropriate cycle time to sterilize liquid waste for your autoclave — typical cycle times for sterilizing liquid waste range from 45 to 90 minutes at 250°F.
- Autoclave temperature must be 250°F (121°C) and autoclave pressure must be 15 psi.

Drain Disposal Assessment: Assess and verify chemical constituents meet drain disposal requirements. Refer to specific Drain Disposal Procedure for additional information.

- **Acceptable:** If acceptable for drain disposal, allow sterilized liquid to cool and then pour waste down the sink and flush the drain with water.
- **Not Acceptable:** If not acceptable, collect and manage waste as chemical waste and provide to EHS for disposal.

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7.4 BIOLOGICAL WASTE DEFINITIONS

7.4.1 Animal Waste

Animal waste, including animal carcasses, body parts, body fluids, blood, and bedding originating from animals known to be contaminated with infectious agents (i.e., zoonotic organisms); or from animals inoculated with infectious agents or recombinant DNA for purposes including, but not limited to, research, production of biologicals, or drug testing.

7.4.2 Cultures and Stocks

Cultures and stocks shall mean materials and/or systems supporting in vitro growth or maintenance of infectious agents, including, but not limited to, the infectious agents themselves, nutrient agars, gels, broths, human and primate cell lines, impure animal cell lines, live vaccines, and attenuated vaccines capable of propagation. Culture dishes and devices for transferring, inoculating and mixing cultures shall mean any plates, flasks, tubes, beakers, vials, bottles, jars, or inoculation loops of any material; manual or mechanical stirring or mixing devices; stoppers or plugs of any material; filtering devices of natural and artificial substances; and any other items or devices for growing and/or maintaining infectious agents in vitro.

7.4.3 Decontamination

Decontamination refers to reduction or inactivation of potentially infectious agents' bioload in waste, so that such waste, including any waste residual in or on a container, no longer constitutes a threat to public health and safety. Standard decontamination methods are outlined in this section. However, certain biological wastes may require alternate methods of decontamination. The [EHS Research Biosafety Program Manual](#) has a section summarizing the various disinfectants, as well as their use and limitations. It is the generator's responsibility to ensure that no infectious agents leave the laboratory in a viable state.

7.4.4 Human Pathological Waste

Human pathological waste, including tissue; organs; body parts, excluding teeth and adjacent structures of bone and gum; body fluids removed during surgery, autopsy or other medical procedures; specimens of body fluids and their containers; and discarded materials saturated with body fluids other than urine. Human pathological waste shall not include urine or fecal material submitted for purposes other than the diagnosis of infectious diseases.

7.4.5 Human Blood and Blood Products

Human blood and blood products include:

- Free-flowing, liquid waste human blood including their components (e.g., serum and plasma);
- Discarded blood products;
- Items saturated and/or dripping with human blood (except feminine hygiene products); or
- Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.

7.4.6 Infectious Agent

Infectious agent refers to any organism or agent that causes disease or an adverse health impact in humans or animals. Typically, biological agents designated as requiring Biosafety Level (BSL) 2, 3 or 4. Refer to the [EHS Research Biosafety Program Manual](#) for additional information on Biosafety Level classifications and associated biological designations.

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7.4.7 Isolation Wastes

Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly contagious diseases.

7.4.8 Recombinant and Synthetic Nucleic Acids

In the context of the National Institute of Health (NIH) Guidelines, recombinant and synthetic nucleic acids are defined as:

1. molecules that a) are constructed by joining nucleic acid molecules and b) that can replicate in a living cell, i.e., recombinant nucleic acids;
2. nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules, i.e., synthetic nucleic acids; or
3. molecules that result from the replication of those described in (1) or (2) above.

7.4.9 Sharps

Sharps waste includes any glass, metal, or plastic instruments or items that have the potential to cut, puncture, scratch, or abrade skin, whether they are contaminated or not. These include, but are not limited to:

- Hypodermic, intravenous or other medical needles,
- Hypodermic or intravenous syringes with/without a needle or other sharp attached,
- Scalpel blades and disposable microtome blades, razor blades,
- Pasteur pipettes and serological pipettes,
- Blood vials,
- Needles with attached tubing ("butterflies"),
- Culture dishes, and
- Broken and unbroken glass and plastic ware, including microscope slides and cover slips, in contact with infectious agents.

Sharps do not include those parts of syringes specifically designed to allow easy removal of a hypodermic, intravenous or other medical needles, and are intended for recycling or other type of disposal, provided the needle has been removed, and such syringe has not been in contact with infectious agents.

8.0 Radioactive Waste Disposal Procedures

Radioactive wastes are generated from radioactive isotopes or byproducts of activities with radioactive isotopes. Specific disposal procedures exist and are dependent on the form, activity, and volume of the radioisotope waste generated. All radioactive wastes must be discarded as outlined in this section.

8.1 WASTE MINIMIZATION

Waste minimization can significantly reduce the volume of waste needed to be stored in the laboratory, and the subsequent cost of disposal.

The following practices will help minimize radioactive waste in the laboratory:

- Waste minimization can significantly reduce the volume of waste needed to be stored in the laboratory, and the subsequent cost of disposal.
- The following practices will help minimize radioactive waste in the laboratory:
- Segregate radioactive waste into appropriate containers provided by EHS (see section 8.2).

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- Separate non-radioactive waste such as shipping boxes, packing materials, and source vial containers. Monitor all items for contamination, and ensure all radiation labels are removed or defaced before disposal as non-radioactive waste. Lead CANNOT be disposed of in regular or radioactive trash.
- Use short-lived radioisotopes whenever possible.
- Perform small-scale experiments whenever possible.
- Use EHS approved liquid scintillation cocktail (see section 8.3).
- Wipe tests less than 100 DPM or samples less than 2x background can be considered non-radioactive.
- Avoid mixing chemicals listed as EPA hazardous with radioactive materials having long half-lives (>90 days). This is known as EPA mixed waste and is very expensive to dispose of.** Make sure all mixed waste is separated from larger containers of non-hazardous radioactive waste (see section 8.3).
- Removal of radioactive waste should occur periodically. Contact EHS for removal of waste at least every 6 months if using short-lived isotopes, and at least annually for long-lived isotopes.

8.2 WASTE CONTAINERS AND LABELING

The segregation of radioactive waste allows for efficient, cost-effective, safe, and proper management and disposal of all radioisotopes used at Weill Cornell Medicine.







To facilitate this process, EHS provides color-coded buckets (Figure 2) that are used to segregate:

- dry solid radioisotopes by half-life,
- metal containers for liquid scintillation counting (LSC) vials,
- polypropylene carboy containers for bulk liquid waste collection, and
- rigid containers for sharps.

Figure 2: Color- Coded Segregation of Dry Waste

All containers used for radioactive materials must be clearly labeled with the radiation symbol; and have a completed radiation waste label (Figure 3). The label is double sided; side one consists of the waste information and side two consists of decay in storage information. Information on decay in storage can be found in [Section 8.5.1](#) of this document.

Segregation of Dry Waste

	Red: P-32, P-33, I-131
	Yellow: S-35
	Green: C-14, H-3
	White: I-125
	Black Metal: Liquid Scintillation Vials (Segregate by half-life as above)
	Carboy: Liquid Waste (Segregated by half-life as above)

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Figure 3: Container Label for Radioactive Materials

HAZARDOUS WASTE RADIOACTIVE MATERIALS

Authorized User: _____

Contact Number: _____

Contact Name: _____

Hazard Characteristics (check all that apply):

☐ ☐ ☐ ☐ ☐ ☐ Other

Chemical Constituents, Amount (%) and pH: _____

Isotope(s)	Estimated Activity (μCi)	Date of Estimated Activity

Notes:

- Separate isotopes with half-life <90 days.
- Do not use abbreviations or formulas.
- Chemical constituents must total 100%.

Waste Type / Physical Form:

☐ Dry Activated Waste (DAW) - Solid Waste
☐ Radioactive Liquid (Aqueous) Waste (Non-Hazardous Chemical + Radioactive Material)
☐ Liquid Scintillation Vials (LSV)
☐ Radioactive Mixed Waste (Hazardous Material + Radioactive Material)
☐ Radioactive Biohazardous Waste
☐ Animal Carcass

Container Size:

☐ 1 Gal
☐ 5 Gal
☐ 30 Gal
☐ 55 Gal
☐ Other _____

No. [_____]

**Weill Cornell Medicine
Environmental Health & Safety
(646) 962-7233**

DECAY IN STORAGE RECORD (OVER)

RADIOACTIVE WASTE DECAY IN STORAGE RECORD

Radionuclides with half-life <90 days

This record must be retained for 3 years

Date Container Sealed: _____

Disposal Date: _____

Background Survey: _____

Surface Survey: _____

Survey Instrument

Model: _____

Serial Number: _____

Your Name: _____

DECAY IN STORAGE INSTRUCTIONS

1. Seal liner or container lid with tape.
2. Record date container was sealed above.
3. Move container to storage location.
4. Store container for 10 half-lives.
5. Record all information listed above before disposal.

For more information, please visit the EHS website:
<https://ehs.weill.cornell.edu/waste-disposal>

The front of the label includes:

- The words "Hazardous Waste"
- Authorized User, Contact number, Contact name
- Hazard characteristics and GHS pictograms
- Each chemical constituent, approximate percentage, and pH
- Isotopes, Estimated activity, and Date of estimated activity
- Waste Type/ Physical Form
- Container Size

The back of the label includes:

- Date Container Sealed
- Disposal Date
- Background Survey
- Surface Survey
- Information of Survey Instrument

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8.2.1 Containers for Dry Activated Waste (DAW)

- EHS provides upon request color coded 5-gallon buckets with 3-millimeter-thick plastic liner used to segregate dry waste by relative half-life. Standard 35 and 55-gallon drums are also available. See Segregation of Dry Waste chart on the following page.
- All containers must have a visible radiation symbol.
- All containers must have an EHS radiation waste label with isotope, activity, date, and listing of chemicals by percentage per container volume.

8.2.2 Containers for Sharps

- Regulated medical waste in the form of sharps must be collected in a red sharps container. A biohazard label or universal biohazard symbol, as well as the radiation symbol and radiation waste label, must be visible and complete on all sharps containers. See Section 8.3 for definitions of sharps waste.
- Sharps that are not regulated medical waste must be collected in a rigid, puncture resistant, leak-proof container and segregated in the dry radioactive waste containers. This container ensures safety for future handling and disposal by personnel. See section 8.3 for a description of non-biohazard sharps waste.

8.2.3 Containers for Bulk Liquid Collection and Secondary Containment

- Liquid radioactive waste should be collected in 2.5 (10 liters) and 5 gallons (20 liters) polypropylene carboy containers provided by EHS. Laboratories who need to use smaller containers should contact EHS.
- All liquid waste containers must have the radiation symbol readily visible and a completed radiation waste tag.
- Keep all liquid containers in secondary containment large enough to hold the entire contents of the container.

8.2.4 Containers for Liquid Scintillation Vials

- Black metal 5-gallon buckets are used to collect liquid scintillation vials. Laboratories generating large quantities of vials can request 30-gallon drums for collection. All LSV containers must have the radiation symbol readily identifiable and a completed radiation waste label.
- If an LSV container is not readily available, the vials may be stored in their original trays, with proper labeling on each tray.
- LSV vials should be segregated by isotope. See Section 8.3 for packing and segregation details
- Counting standards associated with liquid scintillation counters SHOULD NOT be added to LSV waste but treated as a sealed source for disposal.

8.2.5 Containment of Animal Carcasses

- All small carcasses are double-bagged in either clear plastic or biohazard plastic bags with appropriate labeling and stored in a designated RARC freezer until decay and/or disposal by Radiation Safety.
- Carcasses with isotopes having a half-life >90 days require special disposal. Please consult with EHS before injecting animals with long-lived isotopes.

All radioactive animal research is subject to EHS and RARC approval. Radioactive animal waste storage and disposal, including carcasses, bedding, and cage materials must follow RARC guidelines.

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8.3 WASTE SEGREGATION AND ACCUMULATION

8.3.1 Dry Activated Waste (DAW)

Accumulate radioactive DAW in the labeled containers with clear polyethylene liners provided by EHS (see section 8.2). Other containers require prior approval from EHS. DAW is disposed of by incineration. See [Section 8.6.1](#) for definitions of DAW suitable for incineration.

- Dry waste cannot contain more than 100ml total liquid and cannot contain any standing liquid.
- Dry waste cannot have any lead. See section 8.4 for proper lead disposal.
- Dry waste cannot contain biological materials.
- Dry waste cannot contain any metal or sharps except for non-biohazardous hypodermic needles and razor blades contained in a rigid container for sharps.
- Each dry waste container should contain < 2 mCi of a long-lived isotope.
- Remove or deface all radiation labels prior to putting waste in a container. This is especially important for containers with short-lived isotopes (half-lives <90 days).
- A completed radioactive waste label is required for removal from the laboratory.

8.3.2 Liquid Waste

Liquid waste is characterized as being aqueous, readily soluble, readily dispersible, and non-hazardous as defined by the EPA. Consult with EHS if the generated waste has characteristics other than listed above.

- Liquid waste must be segregated by using the following categories:
 - 90 days < half-life < 90 days.
 - By isotope except for H3 and C14, which can be combined in the same container.
 - EPA hazardous (mixed waste). Please refer to [Section 6.5- Chemical Waste Definitions](#) for EPA hazardous waste information and [Section 8.6.7- Radioactive Mixed Waste](#) for radioactive mixed waste details.
- Liquid waste containers must NOT be filled past the shoulder of the container.
- Liquid containers cannot contain any solid materials like gloves, pipette tips, centrifuge tubes, etc.
- The pH of liquid waste should be greater than 2 and less than 12 (2 < pH <12). The laboratory protocols can be changed, so the waste is neutralized before EHS collection. Waste collected otherwise will average 2x the disposal costs.
- All liquid waste containers must have a clearly visible radiation symbol and completed radioactive waste label with chemical constituents listed by percent.
- Drain disposal of radioactive materials in the laboratory is prohibited.

8.3.3 Liquid Scintillation Vials

Liquid scintillation counting vials (LSV) are regulated separately from all other radioactive waste, and therefore must be segregated for specific disposal in metal buckets or drums segregated by isotope. See waste segregation chart in Section 8.2.

- LSV Segregation
 - Separate LSV by isotope except for H3 and C14, which can be combined in the same container.
 - Separate LSV by radioactive and non-radioactive. LSV's with activity < 2x background or < 100 DPM are considered non-radioactive.

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- Separate any LSV's that may be EPA hazardous (Mixed Waste). Please refer to [Section 6.5- Chemical Waste Definitions](#) for EPA hazardous waste information and [Section 8.6.7- Radioactive Mixed Waste](#) for radioactive mixed waste details.
- Liquid scintillation counting standards shall not be placed in LSV waste. They must be treated as sealed sources for disposal. Contact EHS for disposal of sealed radioactive sources.
- All liquid scintillation containers must have a completed radiation waste label.
- Only the approved Liquid Scintillation Cocktail is allowed to use (see chart below). Any liquid scintillation cocktail not on this list must be disposed of immediately as hazardous chemical waste. Contact EHS for chemical removal.
- **Liquid scintillation fluids are NOT approved for sewer disposal at Weill Cornell Medicine.**

8.3.4 Bulk Liquid Scintillation Fluids (LSB)

Bulk liquid scintillation fluids are regulated separately from all other radioactive waste and therefore must be segregated for disposal in polyethylene containers (see Waste Segregation Chart).

- LSB Segregation
 - Separate LSB by isotope except for H3 and C14, which can be combined in the same container.
 - Separate LSB by radioactive and non-radioactive. LSB with activity < 2x background or < 100 DPM are considered non-radioactive.
 - Separate any LSB that may be EPA hazardous (mixed waste). Please refer to [Section 6.5- Chemical Waste Definitions](#) for EPA hazardous waste information and [Section 8.6.7- Radioactive Mixed Waste](#) for radioactive mixed waste details.
 - Containers used directly with HPLC require a cap that accommodates the waste line(s).
- All liquid scintillation containers must have a completed radiation waste label.
- Only the approved Liquid Scintillation Cocktail is allowed to use (see chart below). Any liquid scintillation cocktail not on this list must be disposed of immediately as hazardous chemical waste. Contact EHS for chemical removal.
- **No Liquid scintillation fluids are approved for sewer disposal at WCM.**

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**Table 1: Approved Liquid Scintillation Cocktails**

Perkin Elmer	Fisher Scientific	National Diagnostics	ICN Biomedical
Aqueous Samples	Scintisafe 30%	Ecoscint	BetaMax ES
Opti-Fluor	Scintisafe Econo1	Ecoscint A	CytoScint ES
Ultima Gold	Scintisafe Econo2	Ecoscint H	Ecolite
Ultima Gold AB	Scintisafe Econo F	Ecoscint O	Ecolume
Ultima Gold LLT	Scintisafe Plus 50%	Ecoscint XR	Universol ES
Ultima Gold MV		Ecoscint Ultra	Universol ES
Ultima Gold XR		Ecoscint Flow	
Emulsifier Safe			
Organic Samples			
Ultima Gold F			
BetaPlate Scint			
Opti-Fluor O			

8.3.5 Radioactive Sharps

Radioactive sharps include hypodermic needles, syringes with attached hypodermic needles, razor blades, scalpel blades, X-acto® blades, Pasteur pipettes, serological pipettes, pipette tips, blood tubes, and glass or plastic that is broken or is expected to break in the process of storage, processing, or disposal. Liquid scintillation vials are not handled as sharps waste unless already broken.

- Regulated Medical Waste Sharps

- No biohazardous materials such as bacteria, viruses, fungi, etc. capable of causing illness can be placed in a container unless the infectious agents are deactivated.
- Only a red medical waste sharps container may be used.
- The container must be labeled “Biohazard” and have a radiation symbol.
- The container must have a radiation waste label.

- Routine Research Sharps

- No biological agents or regulated medical waste are allowed.
- Containers must be appropriate for sharps with appropriate radiation labeling.
- Smaller rigid containers for sharps can be placed in dry radioactive waste containers. First, remove all radiation labels.

- All sharps containers must be segregated by radioisotope except those with half-lives >90 days, which can be combined.
- All radioactive waste containers must have a completed radiation waste label.

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8.4 OTHER RADIOACTIVE WASTE

8.4.1 Animal Materials

All radioactive animal research is subject to EHS and RARC approval.

Radioactive animal waste storage and disposal; including carcasses, bedding, and cage materials must follow the guidelines detailed below.

- Radioisotopes with half-lives less than or equal to 16 hours:
 - Hold cages with bedding for decay in a designated waste storage area.
 - Radiation Safety must clear all materials prior to removal.
- Radioisotopes with half-lives greater than 16 hours
 - Scrape and wipe cages of all bedding into a designated waste container.
 - Hold bedding and wiped cages in a designated storage area until cleared by radiation safety.
- Radioactive Carcasses
 - Animal carcasses containing tritium (H-3) or carbon (C-14) can be disposed of as if they were not radioactive if the activity for either isotope does not exceed 0.05 μCi per gram tissue.
 - Animal carcasses containing any amount of radioisotopes cannot be used as food.
 - Animal carcasses must be double bagged, appropriately labeled for radiation, and kept frozen until cleared by Radiation Safety or transferred to a waste broker.

8.4.2 Metallic Lead (Uncontaminated)

- Metallic lead is generally used as radiation shielding in forms that include bricks, sheets, container linings (Pigs), and lead safety apparel.
- The lead must be checked for contamination before disposal.
- Remove or deface any radiation labels and package in a container strong enough to withstand the weight. Each package should be no heavier than 60 lbs.
- Label each package as "CLEAN, FOR RECYCLING".
- Request removal from EHS.

8.4.3 Tritium (H3) Exit Signs and Smoke Detectors

- Tritium gas exit signs and smoke detectors containing radioactive sources are generally licensed materials that need to be disposed of as radioactive waste. Prior to purchasing tritium (3H) gas exit signs or any smoke detectors containing radioactive sources, please discuss the possibility of acquiring non-radioactive alternatives with the EHS Fire Safety Team.
- Collect these items in a sturdy box segregating each by the manufacturer.
- Label each box with the manufacturer, number of units, and "For Disposal".
- Radioactive exit signs and smoke detectors are picked up from laboratories by request. To request waste removal, complete the [Radiation Waste Disposal Request Form](#).

8.4.4 Uranium/Thorium Compounds

- Radionuclides that are long-lived alpha emitters require particular disposal methods. Typical alpha emitters include depleted uranium, uranyl acetate, uranyl nitrate, and natural Thorium.

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- For disposal of uranium and thorium compounds, place each container (dry or liquid) in a clear plastic bag and seal it tightly. Place radiation hazardous waste label on the outside of the sealed bag and request for removal from EHS through the chemical waste pickup. Detailed information on [Uranium compounds](#) is available on the EHS website.

8.4.5 Sealed Sources

- A sealed source is a radioactive material encapsulated in another medium such as plastic or metal, or flame-sealed in a glass ampule, and are generally used for instrument calibration.
- Place sealed sources in a sturdy plastic bag. Place radiation waste label on the outside of the bag.
- Sealed sources are picked up from laboratories by request.

8.4.6 Liquid Scintillation Counters and Electron Capture Gas Chromatographs

- Liquid scintillation counters are used in laboratories for radionuclide assay, and electron capture gas chromatographs are used for environmental sample analysis. This lab equipment typically contains a radioactive sealed source.
- A third-party vendor must remove this radioactive source prior to the transfer or disposal of the unit. Said removal can take several weeks to set-up and complete.
- After source removal, the equipment can be disposed of as electronic waste.

8.5 WASTE REMOVAL

8.5.1 Decay in Storage

Containers with isotopes having half-lives < 90 days can be stored for decay in the laboratory following proper procedures:

- Waste must be decayed for 10 half-lives.
- The radioactive waste label must be complete with isotope, activity, and date.
- The inner or outer container must be sealed.
- Date of first storage must be clearly written on the waste label.
- After storage for 10 half-lives, the waste must be surveyed with a calibrated survey meter.
- Complete the reverse side of the radioactive waste label.
- All records must be kept for inspection for 2 years.

8.5.2 EHS Waste Collection

- Upon request via iLabs or the [Radioactive Waste Disposal Request Form](#) on the EHS website, EHS will collect all radioactive waste not decayed in storage.

8.6 DEFINITIONS

8.6.1 Dry Activated Waste (DAW) for Incineration

Radioactive dry activated waste (DAW) is dry laboratory debris that can be disposed by incineration, including: paper, wood, latex, nylon, cotton, polyethylene, polyester polypropylene, polystyrene, polyurethane, urethane, thermoplastic, nitrile, nitrile rubber, natural rubber, glass (<20% in single container), hypodermic needles. Other materials may be acceptable for incineration with approval.

The following are NOT acceptable as DAW waste: liquid, metal RCRA/TSCA hazardous waste, asbestos, gasses, biological hazardous waste, pyrophoric, explosives, compacted wastes, polyvinyl chloride (PVC) class B or C wastes, sealed sources, and check sources.

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8.6.2 Radioactive Biohazardous Waste

Radioactive biohazardous wastes are any items (such as plastic Petri dishes, plastic tissue culture flasks, micropipette tips, gloves, paper towels, etc.) that are contaminated with both radioactive material and a biohazardous agent. In general, biohazardous waste contains infectious agents (such as bacteria, fungi, and viruses) that can cause illness in humans. Human blood and body fluids contaminated with radioactive material are considered to be a radioactive biohazardous liquid waste.

8.6.3 Radioactive Hazardous Sharps Waste

Radioactive biohazardous sharps waste includes items that are radioactive, biohazardous, and able to pierce the skin. They include hypodermic needles, syringes with attached hypodermic needles, razor blades, scalpel blades, X-acto® blades, Pasteur pipettes, serological pipettes, pipette tips, blood tubes, and glass or plastics that are broken or expected to break in the process of storage, processing or disposal. Liquid Scintillation Vials are not generally handled as a sharps waste unless already broken.

8.6.4 Radioactive Non-Biohazardous Sharps Waste

Radioactive non-biohazardous sharps waste includes items that are radioactive and able to pierce the skin but are not biohazardous. They include hypodermic needles, syringes with attached hypodermic needles, razor blades, scalpel blades, X-acto® blades, Pasteur pipettes, serological pipettes, pipette tips, blood tubes, and glass or plastics that are broken or expected to break in the process of storage, processing or disposal. LSC vials are not generally handled as a sharps waste unless already broken. See also EHS waste disposal guides for more information.

8.6.5 Radioactive Regulated Medical Waste

Regulated medical waste contains radioactive material and biological components; which include animals, animal parts, and/or any biological cultures that may putrefy. This category of waste does not include waste contaminated with biohazardous components, or human blood and body fluids.

8.6.6 Radioactive Liquid Waste

All liquids that have significant levels of radioactivity above background (bkg) must be collected as radioactive waste. Please sample 1 milliliter of your wastes and rinses and count the samples in a Liquid Scintillation Counter. Any sample whose count rate is more than three standard deviations above background, (e.g., **bkg + (3bkg)**), is considered a statistically significant amount of radioactivity above background, and must be collected for disposal through EHS as radioactive waste. Note that laboratory sink disposal of radioactive liquids is not authorized. In situations where very large quantities of water must be used for washing or rinsing purposes, EHS must evaluate the activity and determine if collection is necessary. Any aqueous sample with a count rate below this threshold can be disposed to the sanitary sewer, assuming that EPA guidelines are followed. See the [Drain and Trash Disposal](#) guidelines at the EHS website for further information.

8.6.7 Radioactive Mixed Waste

Radioactive mixed waste contains both radioactive and hazardous chemical materials. EPA defines hazardous if the chemical exhibits a hazardous characteristic, or the chemical is specifically listed as a hazardous waste, such as acutely toxic P-listed or toxic U-listed that would cause harm to the environment or human health.

Qualities for these chemicals consist of the following:

- **Ignitability:** Vapor or material ignites below 140°F in a closed cup test or is an oxidizer.
- **Corrosivity:** pH values of the waste are less than or equal to 2 (acid) or greater than or equal to 12.5 (basic).
- **Reactivity:** Could cause a fire, explosion, or toxic gases release under certain conditions.

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- **Toxicity:** Toxic heavy metals (e.g., arsenic, barium, cadmium, lead, mercury, silver) and organic chemicals (e.g., chloroform, cresols, carbon tetrachloride). Please refer to [Section 6.5- Chemical Waste Definitions](#) on this waste disposal procedure.

Mixed waste must be avoided as the Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC) both regulate how mixed waste is handled and disposed of, which increases the cost of disposal. Liquid scintillation fluids not approved by EHS may be included in this waste stream, please refer to [Section 8.3.3- Liquid Scintillation Vials](#) for more information.

8.6.8 Radioactive Stock Vials

Radioactive stock vials are generally in small quantities and high concentrations of radionuclides. Stock vials containing long half-life isotopes which weren't used or lightly used can exceed concentration limits in packaging for disposal. Therefore, it is essential to segregate such vials from all other wastes.

9.0 Clinical, Biological, and Chemical Waste Management

The following procedures apply to clinical/patient care areas and differ slightly from the chemical and biological waste management procedures referenced in other sections of this manual.

9.1 CLINICAL RED BAG WASTE

Red bags are used to collect biologically contaminated solid, non-sharps wastes. Generators should avoid discarding non-hazardous, ordinary trash wastes (e.g., paper, non-contaminated gloves) in red bags.

9.1.1 Acceptable Red Bag Contents

Utilize red bags for solid, non-sharps wastes and small (<10ml) vials with sealed caps (e.g., Eppendorf tubes or cryovials) of human blood, blood products, and body fluids.

9.1.2 Disposal Procedures

Use Approved Red Bags: New York State requires all red bags to be marked with the name and address of the facility where the regulated medical waste is generated. Use either pre-printed red bags or apply labels (durable and water-resistant) with the name and address of the facility.

Store/Secure: Place red bags in secure containers and devices that properly support the red bag and can be decontaminated.

No Overfill/Sharps: Under no circumstances shall a sharp be disposed in red bags. Do not overfill red bags (e.g., 75% full maximum).

Liquid Waste Considerations: If small vials of liquid wastes are being placed into red bags, the red bags should be double/triple bagged, and special consideration must be paid to limit quantities and weight of the full red bag.

Seal Full Red Bags: Once full (not more than 75%), red bags must be closed and tied.

9.1.3 Packaging/Shipping Procedures

The following procedures apply to the personnel at clinical locations responsible for packaging and shipping red bags/regulated medical waste.

Train Personnel – Regulated Medical Waste Shipper Training must be completed by personnel responsible for (1) packaging and labeling regulated medical waste, and (2) signing Medical Waste Tracking Forms.

Detailed information on the [Regulated Medical Waste Shipper Training](#) and registration instructions are available on the EHS website.

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Package – Sealed red bags must be placed into Stericycle shipping containers, and the box must be properly closed/sealed.

Label – Stericycle shipping containers must be labeled with the Shipper Label. Write the date when the waste is shipped.

Store – Store the box in a secured regulated medical waste storage area.

Contact Stericycle – Contact Stericycle to coordinate regulated medical waste shipments.

Signing and Retention of Shipping Documents – Medical Waste Tracking Forms must be signed by Regulated Medical Waste Shipper-trained personnel. Copies of the Medical Waste Tracking Form must be retained for a minimum of three years and be readily accessible for inspection.

9.2 CLINICAL SHARPS WASTE

Weill Cornell Medicine utilizes Stericycle-Biosystems re-usable sharps containers to collect and dispose of biohazardous sharps wastes. Contact Environmental Health and Safety to obtain Biosystems sharps containers.

9.2.1 Acceptable Sharps Waste Contents

Utilize Biosystems sharps containers (see photo) for:

- Sharps wastes and small (<100ml) vials with sealed caps (e.g., blood tubes) of human blood, blood products, and body fluids; and
- Unused sharps.

9.2.2 Disposal Procedures

Discard Immediately: Place sharps wastes directly into sharps containers.

No Overfill: Under no circumstances shall a sharps container be filled beyond the fill line indicated on the container. Contact EHS immediately if additional sharps containers are required prior to the next sharps collection period.



9.2.3 Packaging/Shipping Procedures

The following procedures apply to the personnel at clinical locations responsible for packaging and shipping sharps/regulated medical waste.

Training – Regulated Medical Waste Shipper training must be completed by personnel responsible for (1) packaging and labeling regulated medical waste, and (2) signing Medical Waste Tracking Forms.

Detailed information on the [Regulated Medical Waste Shipper Training](#) and registration instructions are available on the EHS website.

Packaging – Sealed red bags must be placed into Stericycle shipping containers, and the box must be properly closed/sealed.

Labeling – Stericycle shipping containers must be labeled with the Shipper Label. Write the date when the waste is shipped.

Storage – Store the box in a secured and regulated medical waste storage area.

Coordination with Stericycle – Contact Stericycle to coordinate regulated medical waste shipments.

Signing and Retention of Shipping Documents – Medical Waste Tracking Forms must be signed by Regulated Medical Waste Shipper-trained personnel. Copies of the Medical Waste Tracking Form must be retained for a minimum of three years and readily accessible for inspection.

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9.3 CLINICAL CHEMOTHERAPEUTIC WASTE

Chemotherapeutic agents are toxic chemicals, and specific agents are regulated by the United States Environmental Protection Agency (EPA) as a hazardous waste when disposed of. EPA regulations also consider materials used in administering EPA-regulated chemotherapeutic agents as potential hazardous wastes (e.g., syringes; tubing and IV bags; spill clean-up).

9.3.1 EPA-Regulated Chemotherapeutic Agents List

The EPA regulates the disposal of the chemotherapeutic agents listed in the table below as toxic hazardous waste. Refer to the procedures below to determine if the chemotherapy waste must be disposed of as either:

- EPA-regulated chemotherapeutic wastes disposed of via EHS; or
- All other chemotherapeutic wastes disposed of via Stericycle's chemotherapeutic waste program.

Table 2: EPA Regulated Chemotherapeutic Agents

EPA-Regulated Chemotherapy Agent	C.A.S. #	Brand Name(s)
Arsenic Trioxide (see Note below)	1327-53-3	Trisenox
Azaserine	115-02-6	
Chlorambucil	305-03-3	Leukeran
Chlornaphazine	494-03-1	<i>Discontinued Use</i>
Cyclophosphamide	50-18-0	Cytosan; Neosar
Daunomycin	20830-81-3	Cerubidine; Daunorubicine; Daunoxome; Rubidomycin
Ethyl Carbamate	51-79-6	Urethane
Melphalan	148-82-3	Alkeran; L-PAM
3-Methylcholanthrene	56-49-5	
Mitomycin C	50-07-7	Mutamycin; Mitozytrex
Streptozotocin	18883-66-4	Zanosar
Uracil Mustard	66-75-1	

Note: Arsenic trioxide is regulated as acutely toxic hazardous waste by the EPA, and has more stringent disposal requirements than those outlined in this Program. Contact EHS if arsenic trioxide is utilized in the clinic for supplemental disposal procedures.

9.3.2 EPA-Regulated Chemotherapeutic Waste Managed by EHS

EPA-regulated chemotherapeutic agents listed in the table above must be disposed of via EHS when in the following forms:

- Full and partially-full bottles, vials, IV bags, or other containers with EPA-regulated chemotherapeutic agents
- Syringes containing EPA-regulated chemotherapeutic agents which have not been administered to a patient
- Spill clean-up wastes of an EPA-regulated chemotherapeutic agent

Manage and dispose of EPA-regulated chemotherapeutic wastes in the forms above as follows:

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- 1. Containerize** – Collect wastes into hard-walled containers with screw-top, sealable lids. Syringes must be placed into separate sharps containers. Original bottles and vials with sealable lids or caps do not have to be re-containerized.
- 2. Label** – Label each container with a yellow Hazardous Waste Label (available from EHS) with the name of the EPA-regulated chemotherapeutic agent(s) utilized. Denote “SHARPS” on the label if syringes or other sharp wastes are inside the container.
- 3. Close and Protect** – Close containers when not in use and protect from accidental exposure to employees and patients.
- 4. Store** – Store the container in a Chemical Waste Satellite Accumulation Area with secondary containment (e.g., tub or bin) to contain spills.
- 5. Request Disposal by EHS** – Submit an online a Chemical Disposal Request via [Salute](#) to have these wastes disposed of by EHS.

9.3.3 All Other Chemotherapeutic Waste Managed via Stericycle

All other chemotherapeutic wastes not disposed of via EHS must be disposed of via Stericycle’s chemotherapeutic waste disposal program, including the following wastes:

- Empty or residue-containing bottles, vials, IV bags, or other containers with EPA-regulated chemotherapeutic agents.
- Syringes containing EPA-regulated chemotherapeutic agents which have been administered to a patient.
- Any waste associated with chemotherapeutic agents not regulated by the EPA (i.e., chemotherapeutic agents not listed in the table).

Manage and dispose of these wastes as follows:

1. Containerize –

- Chemo Sharps Waste Containers: Collect chemo sharps waste in yellow chemo sharps containers.
- Yellow Chemo Waste Bags: Non-sharps chemo waste must be collected in yellow chemo waste bags (see photo).

2. Container Labeling – Waste containers and bags must be labeled or marked with:

- Text: “Chemotherapy Waste” or “Chemo.”
- Biohazard identifier: Symbol (see next page) or the word “Biohazard.”
- Facility/Clinic Identification: Name and address of the facility/clinic.

3. Close and Protect – Close sharps containers and chemotherapy waste bags (see photo) and protect against accidental exposure. Remove when full. Chemo waste bags must be removed at least each evening.

4. Collection and Disposal – Clinics in the Weill Greenberg Center must contact WCM Housekeeping Services (646-962-9912) to request chemo waste collections. All other off-site clinical areas must self-manage their chemo wastes with Stericycle as specified above.

5. Training – Regulated Medical Waste Shipper training must be completed by clinical staff responsible for (1) packaging and labeling chemotherapeutic waste boxes and (2) signing Medical Waste Tracking Forms. Detailed information on the [Regulated Medical Waste Shipper Training](#) and registration instructions are available on the EHS website.

6. Package – Sealed chemo sharps containers and chemo waste bags must be placed into Stericycle fiberboard boxes for regulated medical waste which are lined with a yellow chemo waste bag.

7. Package Labeling – Stericycle regulated medical waste fiberboard boxes (see photo) must be labeled:



Example Containers and Bags

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- Apply an “Incinerate Only” sticker.
 - Check “Chemotherapeutic” and “Incineration Only” on the side of the box.
 - Stericycle regulated medical waste Shipper Label. Write the date when the waste is shipped.
- 8. Store** – Store the box in a secured regulated medical waste storage area.
 - 9. Contact Stericycle** – Contact Stericycle to coordinate chemo waste shipments.
 - 10. Sign and Save Shipping Documents** – Medical Waste Tracking Forms must be signed by Regulated Medical Waste Shipper trained personnel. Copies of the Medical Waste Tracking Form must be retained for a minimum of three years and readily accessible for inspection.

9.4 CLINICAL CHEMICAL WASTE

Many pharmaceutical drugs and chemicals utilized in clinics are considered hazardous and regulated by the U.S. Environmental Protection Agency (EPA) when disposed of. The EPA's disposal requirements are more stringent than the standard “clear bag” (e.g., trash) or regulated medical waste “red bag” and sharps container options. In general, drugs and chemical wastes from clinical areas must be collected and disposed of via Environmental Health and Safety (EHS), unless identified by EHS as non-hazardous and safe for alternative disposal.

9.4.1 Reverse Distribution

When suitable, expired or unwanted pharmaceutical drugs acquired through either a private distributor or the NYP Pharmacy should be returned via a reverse distribution program. Refer to the reverse distributor's guidelines for specific instructions and contact EHS for assistance as necessary.

9.4.2 Empty Containers and Vials

A container is considered “empty” if it contains less than or equal to 3 percent by weight of its total capacity (i.e., residual amounts). Containers may include bottles, vials, IV bags, etc.

- **Empty acutely toxic chemical containers** must be managed as hazardous chemical waste and collected for disposal via EHS.
- **Other empty chemical containers** are considered non-hazardous chemical wastes. Limited quantities of small vials may be discarded in sharps containers; otherwise manage as “clear bag” wastes (i.e., regular trash). Glass containers must be placed in a cardboard box prior to clear bag disposal to prevent breakage. Containers which have come into contact with blood or other biological wastes must be managed as regulated medical wastes.



Example Packaging: Regulated medical waste boxes and labels are available from Stericycle.



Example Shipper Label: Regulated medical waste shipper labels are available from Stericycle.

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9.4.3 Non-Hazardous Chemical Waste

Non-hazardous chemical wastes from clinical areas include:

- Syringes containing only non-hazardous chemicals (identified below) or any pharmaceutical drug which has been administered to a patient may be discarded in sharps containers.
- Buffers, saline solutions, and standard IV bags containing non-hazardous chemicals such as sodium chloride, potassium chloride or glucose solutions to which drugs have not been added. A full listing of non-hazardous chemicals is available in [Appendix A](#).
- Small containers (<50ml) may be discarded in a sharps container.
- Aqueous solutions may be disposed via drain disposal.
- Otherwise, dispose via EHS or contact EHS to request an alternate disposal method.

9.4.4 Hazardous Clinical Chemical Waste

All other clinical drugs and chemical wastes must be collected and disposed of via EHS when in the following forms. This disposal service is provided by EHS at no additional charge to the clinic.

- Pharmaceutical drugs including liquids, creams, transdermal patches, inhalers, and solids such as powders, pills, and capsules.
- IV-bags containing drugs or other hazardous chemicals.
- Syringes containing drugs or other hazardous chemicals which have not been administered.
- Unused disinfectants and sterilizing chemicals (e.g., alcohol, bleach)
- Any other chemical not explicitly identified as non-hazardous chemical waste.
- Spill cleanup materials from any of these items.

Manage and dispose of hazardous clinical drug and chemical wastes as follows:

1. **Containerize** – Collect wastes into hard-walled containers with a screw-top, sealable lids. Original manufacturer containers do not need to be re-containerized.
2. **Label** – Label containers with a Hazardous Waste Label (available from [EHS website](#)) with the name of the pharmaceutical agent(s) enclosed. Denote “SHARPS” on the label if syringes or other sharp wastes are inside the container. Check the appropriate Globally Harmonized System of Classification and Labeling of Chemicals (GHS) pictograms for each hazard present in the waste container. To determine the hazards associated to the waste, please refer to the original reagent container labels and/or the Safety Data Sheet (SDS).
3. **Close and Protect** – Close containers when not in use and protect from accidental exposure to employees and patients.
4. **Store** – Store the container in a posted Chemical Waste Satellite Accumulation Area with secondary containment (e.g., tub or bin) to contain spills. Signs to designate area are available from EHS (see [Appendix C](#)).
5. **Request Disposal via EHS** – Submit an online Chemical Disposal Request via [Salute](#) to have these wastes disposed of via EHS.

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9.5 CLINICAL WASTE DEFINITIONS

9.5.1 Acutely Toxic Chemicals

Acutely toxic chemicals are chemicals that the EPA has determined to be acutely toxic and even empty containers must be disposed of as hazardous waste via EHS. Examples of acutely toxic chemicals found in clinics are below; a full list is available in [Appendix B](#).

- Arsenic Trioxide (trisenox)
- Physostigmine Salicylate (antilirium)
- Nitroglycerine
- Phenteramine
- Warfarin and Salts, >0.3% (Coumadin)
- Epinephrine (excluding epinephrine hydrochloride): (adrenalin; EpiPen; Eppy/N; Epifrin; Epinal; Anaphylaxis kit; Epinephrine (inhalants, injectibles, kits); Racepinephrine; Racord; Primatene aerosol inhaler
- Nicotine and Nicotine Salts (Nicotine patches; Habitrol; Nicoderm; Nicorette; Nicotrol; Tetrahydronicotyrine)

9.5.2 Chemotherapeutic Sharps Wastes

Chemotherapeutic sharps wastes are items which are contaminated with a chemotherapeutic agent and can cut or have the potential to cut, puncture, scratch or abrade skin (e.g., needles, pipettes, razor blades, glass bottles, vials).

9.5.3 Chemotherapeutic Clinical Trial Samples

Chemotherapeutic clinical trial samples must be assumed to contain the chemotherapeutic agent being studied and disposed of as required by the Clinical Chemotherapeutic Waste disposal procedures.

9.5.4 EPA-Regulated Chemotherapeutic Agents

EPA-regulated chemotherapeutic agents are a group of chemotherapeutic agents which the EPA regulates to more stringent disposal requirements and which cannot be disposed of via Stericycle.

9.5.5 Clear Bag Waste/Trash

Clear bag wastes are regular trash materials such as standard refuse; non-contaminated gloves and gowns; empty chemical containers (excluding empty acutely toxic chemical containers); empty containers from urine and fecal samples (excluding semen and other infectious body fluids); etc., which are destined for disposal in a landfill as untreated wastes.

9.5.6 Clinical Drug and Chemical Wastes

Clinical drug and chemical wastes are chemicals or pharmaceutical drugs utilized in clinical areas which are hazardous and require more stringent disposal via EHS. Unless identified as a non-hazardous chemical by EHS, chemicals, and pharmaceutical drugs are presumed to be hazardous and must be managed by Clinical Chemical Waste disposal procedure and disposed of via EHS. Chemotherapeutic drugs and DEA-controlled substances are not included, and separate disposal procedures are available in this manual.

Chemical Waste Satellite Accumulation Area

Waste Storage & Removal

- 1. Containerize**
 - Store all waste in a sealed compatible container. Keep containers closed at all times, except when adding waste. Use vented caps when needed.
 - Use secondary containment to prevent spills and to segregate incompatible waste streams.
 - Maintain waste in the Chemical Waste Satellite Accumulation Area until collection.
- 2. Label**
 - Use the hazardous waste labels provided by EHS to mark all containers. *Do not date the containers.*
 - Indicate all hazard characteristics and write all chemical constituents and approximate percentages. *Do not use abbreviations.*
- 3. Contact EHS**
 - Once the containers are full, request pickup by completing a Chemical Collection Request Form. Visit <https://ehs.weill.cornell.edu/chemicalcollection> or scan the QR Code.

Unacceptable Storage/Disposal

- Never store more than 1 quart of liquid acutely hazardous waste (P-listed), or more than 1 kg of solid acutely hazardous waste.
- Never accumulate more than 55 gallons of hazardous non-acute waste.
- Never use evaporation or dilution as a treatment method.
- Never dispose of waste in the sink or trash unless listed in the approved non-hazardous chemical list on the EHS website.

Example of chemical waste properly containerized and labeled.

HAZARDOUS WASTE
Weill Cornell Medicine

For more information, please refer to EHS Program Manual 5.2 - Waste Disposal Procedures

Well Cornell Medicine
Environmental Health and Safety
TEL: 646-962-7233 | ehs@med.cornell.edu
Weill Cornell Medicine | 402 East 67th Street, Room LA-0020 | New York, NY 10065

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9.5.7 Human Blood and Blood Products

Human blood and blood products include:

- Free-flowing, liquid waste human blood, including components (e.g., serum and plasma);
- Discarded blood products;
- Items saturated and/or dripping with human blood (except feminine hygiene products); or
- Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.

9.5.8 Non-Hazardous Chemical Wastes

Non-hazardous chemical wastes are chemicals identified by EHS to be non-hazardous. These chemicals are acceptable for disposal via clear bag wastes, red bag wastes, sharps waste, or drain disposal; depending on the nature of the waste (e.g., syringes, needles, gloves, vials) and other potential contaminants (e.g., human blood, body fluids).

9.5.9 Red Bag Wastes

Red bag wastes are non-sharps regulated medical wastes (e.g., blood-contaminated gloves, pads, gowns) collected into red bags which are destined for disposal via autoclaving then landfill without treatment or destruction of chemical wastes.

9.5.10 Sharps

Red bag wastes are non-sharps regulated medical wastes (e.g., blood-contaminated gloves, pads, gowns) collected into red bags which are destined for disposal via autoclaving then landfill without treatment or destruction of chemical wastes.

- Hypodermic, intravenous or other medical needles;
- Hypodermic or intravenous syringes with/without a needle or other sharp attached
- Scalpel blades and disposable microtome blades, razor blades
- Pasteur pipettes and serological pipettes
- Blood vials
- Needles with attached tubing ("butterflies")
- Culture dishes
- Broken and unbroken glass and plastic ware, including microscope slides and cover slips, in contact with infectious agents.

Sharps shall not include those parts of syringes specifically designed to allow easy removal of a hypodermic, intravenous or other medical needles, and are intended for recycling or other types of disposal; provided the needle has been removed, and such syringe has not been in contact with infectious agents.

10.0 Specific Disposal Procedures

10.1 DRAIN DISPOSAL

The disposal of hazardous materials (e.g., chemicals, biological materials, radioactive, and universal waste materials) via a sink drain is highly-regulated. These regulations have been established to protect human health and the environment from exposure to hazardous substances, as well as to prevent damage to the City's water treatment facilities.

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10.1.1 Requirements for liquid waste disposal via a drain

10.1.1.1 Characteristics of Liquid to Be Discarded

- Non-radioactive: contact Health Physics for the disposal of radioactive wastes.
- Decontaminated biological hazards (no untreated biological waste), refer to the [Biological Waste Management](#) procedures.
- Chemical constituents listed on the Non-Hazardous Chemicals List (Attachment A).
- Liquid not exceeding 5 gallons (19 liters).
- Contains less than 10% solids or viscous substances which are insoluble in water.
- Contains less than 50 mg/L (ppm) oils and greases; and
- pH greater than 5.0 and less than 11.0 or not have any other corrosive property likely to cause damage to structures or equipment of the sewerage system.

10.1.1.2 Drain Requirements

The drain must discharge to the sewer via a laboratory/utility sink drain only.

10.1.1.3 Procedure

Flush: Flush with copious amounts of water (15-20 times the original volume).

Wait: Allow the previous chemical to be completely flushed prior to discharging the next non-hazardous chemical waste.

10.1.2 Non-Hazardous Chemical Selection Criteria

EHS is the only group or entity at WCM which has the EPA Waste Determination authority to designate chemicals as non-hazardous for drain and trash disposal. Only the substances identified on the Non-Hazardous Chemicals List (Attachment A) are considered suitable for drain and trash disposal when following the procedures listed below. A chemical was determined to be non-hazardous for the purpose of drain or trash disposal if it did not exhibit the following characteristics:

- Toxic substance which may adversely affect human health or the environment (e.g., have an oral-rat LD50 toxicity value less than 500 mg/kg or identified as a toxic/priority pollutant by the EPA)
- Carcinogenic substance according to the National Institute of Occupational Safety and Health (NIOSH) 1979 Registry of Toxic Effects of Chemical Substances
- Hazardous waste as defined in 6 NYCRR Part 371-Identification and Listing of Hazardous Waste
- Flammable (i.e., has a flash point less than or equal to 140°F) or explosive liquids, solids, or gases
- Noxious or malodorous gas or substance (e.g., mercaptans)
- Chemicals or substances containing any of the following metals: arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, or zinc
- Untreated biological hazard
- Radioactivity

Note: Other chemicals may be suitable for disposal via this procedure. However, **the discharge of chemicals not listed explicitly as a Non-Hazardous Chemical List is strictly prohibited.** Generators may submit requests for chemicals to be reviewed by contacting EHS at ehs@med.cornell.edu or 646-962-7233. An EHS representative will review the request to determine if the chemical should be added to the list.

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10.2 TRASH DISPOSAL (EXCLUDING EMPTY CONTAINERS)

Containers of chemicals (including non-hazardous chemicals), biological, radioactive, and universal waste materials are not approved for disposal via normal trash. However, standard laboratory articles (e.g., gloves, pads, etc.) contaminated with non-hazardous chemicals may be disposed of via the trash.

Special Note: It is essential to be conscious of the potential harm and concern which may result from the disposal of non-hazardous chemicals via the trash. Disposal of a partially-full chemical bottle or contaminated item containing excess powders may result in the forming of “dust clouds” during its handling/trash compacting, which then could expose Housekeeping or other employees to unknown chemical hazards.

10.2.1 Requirements for Trash Disposal of Contaminated Laboratory Debris

10.2.1.1 Characteristics

- Non-radioactive: contact Environmental Health and Safety (EHS) for the disposal of radioactive wastes.
- No biological hazards (treated or untreated), refer to [Biological Waste Management](#) procedures.
- No sharps or materials that can cut or abrade skin (e.g., no pipette tips, serological pipettes, razor blades, glass slides).
- Chemical constituents listed on the Non-Hazardous Chemicals List ([Appendix A](#));
- No full or partially-full containers.
- No excess or free-flowing powders; and
- Standard laboratory articles only (e.g., gloves, pads, etc.)

10.2.1.2 Procedure

Bag/Contain: if feasible, be consolidated into a bag or other container to minimize potential releases; and

Trash: Place in a regular trash receptacle for Housekeeping to collect.

10.3 EMPTY CONTAINERS

A container is considered “empty” if it contains less than or equal to 3 percent by weight of its total capacity.

10.3.1 Requirements for Trash Disposal of Empty Containers

10.3.1.1 Characteristics

- Non-radioactive: contact Environmental Health and Safety for the disposal of radioactive wastes.
- No biological hazards (treated or untreated): refer to Biological/Regulated Waste Management for disposal procedures.
- Contains less than or equal to 3 percent by weight of its total capacity.
- Originally did not contain an acutely toxic chemical ([Appendix B](#)). Acutely toxic chemical containers must be managed and disposed of as a Chemical Waste; and
- Empty urine and fecal sample containers.

10.3.1.2 Procedure

Remove Contents: Attempt to recover, collect, or use all of the container’s contents (e.g., no contents should be able to immediately spill from the open container, if held upside-down);

Rinse: Triple rinse with water and discharge the water down a laboratory sink drain

Discard: Discard in the trash with lids removed for Housekeeping to collect

- Glass in a rigid cardboard/glass collection box marked “Glass for Trash”.

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- Urine and fecal matter must be poured off prior to disposal of the containers.
- All others must be double-bagged in clear plastic garbage bags.

10.4 RED BAG WASTE

Red bags are used to collect biologically contaminated solid, non-sharps wastes. Generators should avoid discarding non-hazardous, normal trash wastes (e.g., paper, non-contaminated gloves) in red bags.

10.4.1 Acceptable Red Bag Contents

Utilize red bags for solid, non-sharps wastes and small (<10ml) vials with sealed caps (e.g., Eppendorf tubes or cryovials) of:

- untreated biological agents and recombinant or synthetic nucleic acids designated BSL1;
- decontaminated infectious agents and recombinant or synthetic nucleic acids designated BSL2 or higher; and
- <10 ml of untreated human blood, blood products, and body fluids not known to be infectious.

10.4.2 Disposal Procedures

- Decontaminate (as required):** Refer to the Biological/Regulated Medical Waste Management procedure to determine if the biological waste must first be decontaminated prior to disposal and follow the appropriate decontamination procedures.
- Use Approved Red Bags:** New York State requires all red bags to be marked with the name and address of the facility where the regulated medical waste is generated. Only use approved pre-printed red bags. Pre-printed red bags are available from the Housekeeping department servicing your area.
- Autoclaving Considerations:** Standard red bags are not suitable for autoclaving. Generators must purchase autoclave-safe red bags. Once autoclaving is complete, allow autoclave bags to cool and then place the autoclave bag into the approved red bag to satisfy the facility name and address requirements.
- Store/Secure:** Place red bags in secure containers and devices that properly support the red bag and can be decontaminated.
- No Overfill/Sharps:** Under no circumstances shall a sharp be disposed in red bags. Do not overfill red bags (e.g., 75% full maximum).
- Liquid Waste Considerations:** If small vials of liquid wastes are being placed into red bags. Red bags should be double/triple bagged and special consideration to limit quantities and weight of the full red bag.
- Seal Full Red Bags:** Once full (not more than 75%), laboratories must close and tie the red bag. Place full red bags in a central location within the laboratory for collection by Housekeeping. Under no circumstances should red bag wastes be put in the hallway.
- Nightly Collections:** The Housekeeping department servicing your area will collect full, sealed red bags each evening as part of their standard Housekeeping services.

10.5 SHARPS WASTE

Weill Cornell utilizes Stericycle-Biosystems re-usable sharps containers to collect and dispose of biohazard sharps wastes. Contact Environmental Health and Safety to obtain Biosystems sharps containers.

10.5.1 Acceptable Sharps Waste Contents

Utilize Biosystems sharps containers (see photo) for:

- Utilize Biosystems sharps containers (see photo) for:
 - Untreated biological agents and recombinant or synthetic nucleic acids designated BSL1
 - Decontaminated infectious agents

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- Recombinant or synthetic nucleic acids designated BSL2 or higher:
- Untreated human blood, blood products, and body fluids not known to be infectious
- Sharps used with non-acutely toxic, non-odiferous chemical wastes (e.g., buffers, standard solvents, and reagents). Refer to the Acutely-Toxic Chemical Waste (Sharps and Empty Containers) procedure for additional information on chemical waste sharps that must be collected and disposed of via EHS
- Unused sharps

10.5.2 Disposal Procedures

Decontaminate (as required): Refer to the Biological Waste Management procedures to determine if the biological waste must first be decontaminated prior to disposal and follow the appropriate decontamination procedures.

Discard Immediately: Place sharps wastes directly into sharps containers.

No Overfill: Under no circumstances shall a sharps container be filled beyond the fill line indicated on the container. Contact EHS immediately if additional sharps containers are required prior to the next sharps collection period.

Sharps Container Replacement: Laboratories must submit an online Sharps Disposal Request via [Salute](#) to initiate a sharps collection. An empty sharps container will be provided for each full container requested for disposal.

10.6 BIOLOGICAL WASTE LIQUIDS

Biological waste liquids consist of cultures, stocks, human blood, blood products, and body fluids in volumes not otherwise suitable for disposal via red bags or sharps containers. If the biological waste liquid is associated with tissue culture processing using vacuum flasks, refer to Tissue Culture/Vacuum Flask Disinfection and Disposal (below). Biological waste liquids are primarily disposed of down sinks, once decontaminated and deemed suitable for drain disposal.

Decontaminate: Decontaminate biological waste liquids using appropriate disinfectant methods.

Drain Disposal Assessment: Assess and verify chemical constituents meet drain disposal requirements. Refer to Drain Disposal procedures section of additional information.

- **Acceptable:** If acceptable for drain disposal and after 30 minutes of contact time, disinfected liquid waste is poured down the sink and flushed with copious amounts of water.
- **Not Acceptable:** If radioactive mixed waste, dispose of via Health Physics as hazardous chemical and radioactive mixed waste. Otherwise, dispose of via as hazardous chemical waste.

10.7 TISSUE CULTURE VACUUM FLASK DISINFECTION AND DISPOSAL

The culturing and preparation of cell or organ tissues generates liquid wastes which must be disinfected prior to disposal. The tissues contained in the media waste constitute a biological waste requiring proper disinfection prior to disposal. The following procedure outlines the proper disinfection and disposal steps for tissue culture wastes.

Add Disinfectant: Fill the primary vacuum flask with bleach to ~10% of the flask's volume. If a different EPA-approved disinfectant is utilized, add the volume of disinfectant required to achieve the manufacturer's recommended concentration. Do not use alcohol-based disinfectants. Note that when bleach and water are mixed, the solution's disinfectant qualities only last 24 hours. Additional bleach may be required.

Label: Label the flask indicating tissue culture media, a disinfectant used, and other chemical constituents. "Biohazard" labeling, available from EHS, should be used for human-derived or infectious tissue culture wastes.

Containment: Place the vacuum flask in secondary containment (e.g., bin or tray) to hold the contents of the flask in case of spill or release.

Aspirate: Aspirate the tissue culture waste into the flask containing a disinfectant. The maximum volume should not exceed 75% of the flask's total volume.

Fill Vacuum Flask to No More Than 75% Full: Stop using the vacuum flask once it is ~75% full.

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Add Additional Disinfectant: Add an additional volume of disinfectant required to achieve the manufacturer's recommended concentration (e.g., 10% bleach).

Stir: Stir at room temperature for 30 minutes or let sit overnight to ensure proper disinfection.

Determine: Assess and verify chemical constituents meet drain disposal requirements. Refer to Drain Disposal Procedures for additional information.

- **Acceptable:** If acceptable for drain disposal and after 30 minutes of contact time, disinfected liquid waste is poured down the sink and flushed with copious amounts of water.
- **Not Acceptable:** If radioactive mixed waste, contact Environmental Health and Safety (EHS) for disposal as hazardous chemical and radioactive mixed waste. Otherwise, dispose of following Hazardous Waste Procedure.

10.8 ANIMAL TISSUES

10.8.1 Vertebrate Animal Disposal Procedures

Vertebrate animal tissues and carcasses must be disposed of through the Research Animal Resources Center (RARC). It is important to adhere to the procedures specified by RARC since animal research at WCM is regulated and approved by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC), an external accrediting organization. Failure to comply with procedures could adversely affect the Medical College's accreditation.

10.8.2 Invertebrate Animal Disposal Procedures

Invertebrate animal tissues and carcasses not administered through the Research Animal Resources Center (RARC) must be disposed of via standard red bag or sharps (if contained in sharp-like containers).

Euthanize: The invertebrates must be appropriately euthanized prior to disposal.

Decontaminate (as required): Refer to the [Biological/Regulated Medical Waste Management](#) procedures to determine if the animal waste must first be decontaminated prior to disposal and follow the appropriate decontamination procedures.

Red Bag or Sharps Disposal: Discard in red bags or sharps depending on the container used to collect the invertebrate animal (e.g., glass test tubes disposed of in sharps containers). Manage red bag and sharps waste as outlined in this section.

10.9 HUMAN PATHOLOGICAL WASTE

Recognizable tissues, organs and body parts from human subjects are regulated under various state laws regarding the proper disposal of human remains. Each case will be considered individually. Contact EHS to determine the appropriate means for disposing of human pathological waste.

10.10 BIOSAFETY LEVEL 3 AND SELECT AGENT WASTE

Research conducted with Biosafety Level 3 agents and Select Agents requires laboratory-specific operating procedures to be developed prior to commencing work with those agents. These laboratory-specific operating procedures must include specific biological waste decontamination and disposal procedures. Refer to the Biosafety Level 3 and/or Select Agents laboratory-specific operating procedures for specific biological waste decontamination and disposal procedures.

10.11 ACUTELY TOXIC CHEMICAL WASTE (SHARPS AND EMPTY CONTAINERS)

The Environmental Protection Agency (EPA) has more stringent disposal requirements for chemicals classified as acutely toxic, as there is concern that even the residues of an acutely toxic chemical can be harmful to human health and the environment. As such, sharps (e.g., pipettes), "empty" bottles and containers, weighing boats, etc. which have residues of

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acutely-toxic chemicals must also be collected and managed as chemical wastes. A list of EPA-regulated acutely toxic chemicals is available in [Appendix B](#).

10.11.1 Odiferous/Pungent Chemicals

Certain chemicals may have a pungent odor (e.g., beta-mercaptoethanol, phenol), which are not classified as acutely toxic. Sharps waste (e.g., pipettes) with residues of these chemicals can legally be discarded in biohazard sharps containers. However, the odor may be a nuisance to laboratory staff. If this occurs, these sharps can also be collected as chemical waste. Pipette tips can typically be discarded into the waste container used to collect the chemical wastes (e.g., adding tips to phenol/chloroform extraction liquid chemical wastes).

10.12 ETHIDIUM BROMIDE/ELECTROPHORESIS GELS AND SOLUTIONS

Electrophoresis gels are commonly used in molecular biology laboratories for the identification of DNA. These gels typically are agarose-based or polyacrylamide-based. The identification process utilizes an organic fluorescence dye (e.g., ethidium bromide, propidium iodide, acridine orange, SYBR® Green) to stain the nucleic acids. Specific details can be found in the [EHS Update of Disposal of Electrophoresis Gels and Solutions](#) on the EHS website. The wastes associated with this process must be treated as chemical wastes as follows.

10.12.1 Electrophoresis Gels and Contaminated Non-Sharp Debris

Collect: Collect electrophoresis gels and contaminated “non-sharp” lab debris (e.g., gloves, pads, towels, tubes, etc.) into a 5-gallon pail, lined with a clear plastic bag. The 5-gallon pail utilizes a screw-top lid which must remain closed at all times except when “actively” adding wastes from the container. **Contact EHS to obtain a 5-gallon pail.**

Pre-Label Containers: The 5-gallon pails are pre-labeled and as such do not require the yellow Hazardous Waste label.

No Sharps: No sharp items (e.g., large plastic pipettes, razor blades, etc.) are to be placed into the 5-gallon pails. See below for the proper means for disposing of contaminated sharps lab debris.

Dispose of: Once the 5-gallon pail is 75% full, complete and submit an online a Chemical Disposal Request via [Salute](#). An empty replacement pail will be provided at the time of the collection.

10.12.2 Contaminated Sharps

Various types of sharp lab debris (e.g., razor blades, rigid plastic pipettes, etc.) may become contaminated with chemicals throughout the identification process. The contaminated sharps debris must be collected and disposed of as follows:

Decant: Decant any excess solutions into an appropriate waste buffer or stock solution bottle.

Collect: Collect the chemically contaminated sharps lab debris into a container with rigid walls to prevent puncture. The container must remain sealed/closed at all times except when immediately adding or removing wastes.

Label “Hazardous Waste Sharps”: Label (i.e., yellow self-adhesive hazardous waste label available from EHS), store, and otherwise manage the waste container as specified in [WCM Chemical Waste Disposal Procedures](#). Be sure to indicate “SHARPS CONTAINING” on the label.

Dispose of: Once full, complete and submit an online a Chemical Disposal Request via [Salute](#) available on the EHS website.

10.12.3 Stock Solutions

Stock solutions typically contain higher concentrations of toxic chemicals. As such, stock solutions are unsuitable for treatment and must be submitted to EHS for disposal as dictated by the WCM Chemical Waste Disposal Procedures.

Collect: Collect stock solutions into a sealable bottle/container. The bottle must remain sealed/closed at all times except when immediately adding or removing wastes from the bottle.

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Label: Label (i.e., yellow self-adhesive hazardous waste label available from EHS), store, and otherwise manage the waste container as dictated by [Section 6.0- Chemical/Hazardous Waste Management](#).

Dispose of: Once full, complete and submit an online a Chemical Disposal Request via [Salute](#) .

10.12.4 Spent Buffer Solutions

Spent buffer solutions typically contain low concentrations (less than 0.01% by weight) of an organic fluorescence dye used in the identification process. These solutions are not suitable for drain disposal without prior treatment. The following are approved methods for treating the spent buffer solutions. Please note that laboratories may also choose to submit the spent buffer solutions to EHS for disposal as Chemical Waste.

10.12.5 Treatment Via Adsorption for Organic Fluorescence Dyes

Filtering the spent buffer solutions, which are free of other non-organic contaminants (e.g., heavy metals) through a bed of activated charcoal or ion exchange resin is a relatively simple and effective method for removing the toxic contaminant.

Determine Suitability for Drain Disposal: Utilize the Chemical Waste Drain and Trash Disposal Procedure to determine if any of the spent buffer constituents, other than the organic fluorescence dyes, are not acceptable for drain disposal (e.g., heavy metals.) If a spent buffer contains any constituents, other than the organic fluorescence dyes, which are not acceptable for drain disposal, then do not treat the waste. Manage the spent buffer solution as a hazardous waste as required by [Section 6.0- Chemical/Hazardous Waste Management](#).

If Acceptable for Drain Disposal, Filter: If the spent buffer solution contains only constituents, other than the organic fluorescence dyes, which are acceptable for drain disposal, then filter the solution through a bed or column of activated charcoal or ion exchange resin. Follow the manufacturer's directions for the filter's proper use. The filter kits in the following table are examples of products available.

Table 3: Available Filter Kits

Company Name	Product Name	Product Code	Phone Number	Website
Amresco, Inc.	Destaining Bags	E732	800-829-2805	www.amresco-inc.com
BD Biosciences-Clontech	BondEX Detoxification Cartridges	K3080-1	877-232-8995	www.clontech.com
VWR International	Extractor Waste Reduction System	28165-500	800-932-5000	www.vwrsp.com

Detect: If ethidium bromide (EtBr) was used as the organic fluorescence dye, utilize ultraviolet (UV) light to observe its presence in the filter effluent.

Re-Filter: If EtBr is still present in the effluent, then re-filter the solution. Please note that this may be an indication that the filter may be spent and needs to be replaced.

Flush: If EtBr is not observed in the effluent, then discharge to a sink drain with copious amounts of water.

Dispose of: Dispose of the spent filter cartridges/resins in Electrophoresis Gel 5-gallon pails.

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10.12.6 Treatment Via Chemical Detoxification for Ethidium Bromide Only

Spent buffer solutions containing ethidium bromide (EtBr) in very dilute aqueous solutions and are free of other contaminants (e.g., heavy metals), can be chemically treated and disposed of via a sink drain. This process converts the ethidium bromide to the physiologically inactive product, 2-carboxybenzophenone, with chlorine bleach.

Determine: Utilize the Drain and Trash Disposal Procedure to determine if any of the spent buffer constituents, other than the EtBr, are not acceptable for drain disposal (e.g., heavy metals.) **If a spent buffer contains any constituents, other than the ethidium bromide, which are not acceptable for drain disposal, then do not treat the waste.** Manage the spent buffer solution as a hazardous waste and submit it to EHS for disposal as stated in [Section 6.0-Chemical/Hazardous Waste Management](#).

Acceptable: If the spent buffer solution contains only constituents, excluding the EtBr, which are acceptable for drain disposal, then collect the buffer solutions into a sealable bottle/container. The bottle must remain sealed/closed at all times except when immediately adding or removing wastes from the bottle.

Label: Label the collection bottle "Spent Buffer Solution with Ethidium Bromide & Bleach."

Bleach: For each 10 mg EtBr per 100 ml of solution, add 100 ml household bleach. (Bleach deteriorates over time upon exposure to air. If in doubt about the quality of the bleach, use an excess amount and stir overnight.)

Stir: Stir at room temperature for 4 hours.

Detect: Utilize a UV light to observe its presence of EtBr.

- If EtBr is still present in the effluent, re-treat the solution.
- If EtBr is not observed, then continue.

pH Adjust: Check and adjust the pH of the waste solution utilizing either sodium hydroxide or potassium hydroxide so as the resultant solution has a pH greater than 5.0 and less than 11.0.

Flush: Flush waste solution to a sink drain with copious amounts of water.

10.13 DEA CONTROLLED SUBSTANCES

The disposal of DEA controlled substances is restrictive and requires prior approval by the US Drug Enforcement Agency and the NYSDOH Bureau of Narcotics Enforcement. EHS assists in obtaining these approvals and the disposal of DEA controlled substances as follows:

Email EHS: Email EHS at ehs@med.cornell.edu and provide an inventory of the DEA controlled substances to be disposed of and the DEA Registrant's contact and license information.

Store and Secure: Generator continues to store DEA controlled substances in a secure manner. [The EHS Update – Security of DEA Controlled Substances](#) provides storage guidelines while awaiting disposal. The material should be clearly identified "Expired – Do Not Use"

EHS Submits Documents: EHS prepares required disposal documentation (e.g., DEA Form 41) and submits to generator/DEA registrant for review and signature. EHS submits signed documents to the DEA and the New York State Department of Health (NYSDOH) Bureau of Narcotics Enforcement for authorization.

Witnessed Disposal: EHS coordinates witnessed disposal of DEA controlled substances with the generator/DEA Registrant.

DEA Notification: EHS notifies the DEA and the NYSDOH Bureau of Narcotics Enforcement upon completion of disposal.

Record Retention: EHS maintains disposal documentation for a minimum of two years.

10.14 MERCURY LAMPS AND LIGHT BULBS

Certain light bulbs and lamps may contain toxic metals such as mercury which require special disposal. These light bulbs and lamps are regulated by the Environmental Protection Agency as universal waste lamps. Typical examples of universal

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waste lamps include, but are not limited to, fluorescent, high-intensity discharge (HID), neon, ultraviolet (UV), mercury vapor, high-pressure sodium, and metal halide lamps. This procedure provides guidance on the proper handling, storage, and disposal of universal waste lamps at Weill Cornell.

Prevent Breakage: All universal waste lamps are to be handled and stored in a manner to prevent breakage. The lamps (unbroken) must be placed into containers or packages that:

- Are structurally sound
- Remain closed
- Are adequate to prevent breakage
- Lack evidence of leakage or spillage

NOTE: If the generator does not possess an adequate container or package, then immediately contact EHS for proper packaging and disposal.

Label Containers: Containers must be labeled “Universal Waste Lamps.”

Store Safely: While accumulating lamps, the containers and/or packages must be stored in a satellite accumulation area designated as either a “Chemical Waste Satellite Accumulation Area” (if additional types of waste are generated) or a “Satellite Accumulation Area for Universal Waste Lamps” sign.

Collection Request: Once the containers are full or as desired by the generator, an online Chemical Disposal Request via [Salute](#) should be submitted to EHS for the collection and disposal of the universal waste lamps.

10.14.1 Broken lamps

Broken lamps are no longer considered universal wastes and must be managed in compliance with the [College's Chemical Spill Planning and Response Procedures](#).

The wastes generated from the clean-up operations must be managed as specified in WCM Chemical Waste Disposal Procedures.

At a minimum, the broken lamps must comply with the following:

- Placed into a hard-walled container which is sealable.
- The container must have a “Hazardous Waste” label with the words “Sharps - Broken Lamps”.
- Store the container in a “Chemical Waste Satellite Accumulation Area”.
- Submit an Online a Chemical Disposal Request via [Salute](#) to EHS for collection and disposal.

10.15 COMPUTERS/SURPLUS ELECTRONICS RECYCLING

This procedure ensures the proper recycling of Weill Cornell Medicine (WCM) computer equipment and other electronics following federal, state and local waste disposal regulations. Most electronics and circuit boards contain high levels of toxic heavy metals (e.g., lead, silver) that are classified as “hazardous waste” unless adequately recycled. Surplus electronics are defined as electronic equipment which contains circuit boards or other components with toxic heavy metals.

10.15.1 Acceptable Electronics Waste

Computers and Related Peripherals, including:

- Central Processing Units (CPUs)
- Keyboards and Mice
- Monitors
- Printers and Photocopiers
- Fax Machines and Scanners
- Servers
- External Hard Drives

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Other Surplus Electronics, including:

- Televisions
- Photocopiers
- VCR/DVD players and other video media devices
- Radios and Audio Equipment
- Some laboratory equipment
- Calculators
- Digital Cameras

10.15.2 Disposal Procedures

No Trash: Ensure no surplus electronics are disposed of in the regular trash.

Decontaminate: Decontaminate surplus electronics (e.g., lab equipment) which have been in contact with chemicals and/or biological materials, if applicable.

Label: Print out, complete, and tape "Surplus Electronics to be Recycled" sign, shown in the [EHS Update](#).

Store Safely: Store surplus electronics in a secure location (e.g., within the lab or office) prior to collection. Surplus electronics placed in the hallway are considered abandoned and is an illegal practice.

Request Collection:

Locations Supported by WCM Engineering and Maintenance

Submit a work order to E&M online at <http://maintenanceexpress.med.cornell.edu>, or call 212-746-2288.

These locations include all sites serviced by WCM Engineering and Maintenance (E&M), including:

- 1300 York Avenue locations (A-E, F, LC, CP)
- S/SI Building
- Olin Hall
- Oxford
- Lasdon House
- 418 East 71st Street
- 402 East 67th Street
- 425 East 61st Street
- 407 East 61st Street
- 575 Lexington Avenue

E&M personnel will collect the electronics and transport them to Weill Cornell's designated central electronics storage facility.

Locations in New York-Presbyterian Hospital (NYP) Space

Collections in NYP Space are conducted on an as-needed basis. Email EHS at ehs@med.cornell.edu with the information below to request collection.

Other Offsite Locations

Email EHS at ehs@med.cornell.edu with the information below to request collection.

Collections from locations not listed above are conducted on an as-needed basis. These sites include:

- Eastside Practice
- Westside Practice
- Westside Physicians' Offices
- 40 Worth Street
- 156 William Street

WCM-Affiliated Locations

Collections from WCM-Affiliated locations are conducted on an as-needed basis at the discretion of the EHS Director. Email EHS at ehs@med.cornell.edu to request information regarding disposal.

For correspondence related to 575 Lexington Avenue, Locations in NYP space, other offsite locations, and WCM-affiliated locations, be sure to include:

- Contact name and telephone number

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- Building address and room number of the pickup location
- Type and quantity of surplus electronics to be collected
- Any access restrictions and office hours

EHS will follow up with the requestor to schedule the collection. If large collections or cleanouts are anticipated, such as the mass purchasing of new equipment, inform EHS via email. **There is no cost for this service.**

10.16 BATTERY RECYCLING AND DISPOSAL

Batteries may contain hazardous materials such as cadmium, chromium, lead, lithium, mercury, and silver. If packaged or disposed of improperly, these materials may present a fire hazard during transportation, pollute the environment and pose a threat to human health. Waste batteries which contain hazardous materials must be sent to, or collected by, Environmental Health and Safety (EHS). EHS ensures that these batteries are managed in an environmentally sound manner via recycling and ensures compliance with applicable Federal, State, and local regulations. Common examples of batteries and their sources include, but are not limited to:

Battery Types

- Alkaline
- Lead-acid and lead-acid gel
- Lithium-ion (Li)
- Nickel-cadmium (Ni-Cd)
- Nickel metal hydride (Ni-MH)
- Mercuric oxide
- Carbon-zinc
- Silver-oxide
- Silver-cadmium

Battery Sources

- Laptop computers
- Cellular and cordless phones
- Cameras and camcorders
- Video and audio equipment
- Pagers
- Appliances and power tools
- Flashlights
- Smoke detectors
- Emergency lighting fixtures

10.16.1 Disposal Procedures

Alkaline and carbon-zinc batteries (excluding button batteries) may be disposed with regular refuse or sent to EHS for disposal. Follow the steps below to dispose of intact batteries.

Tape Battery Terminals - Batteries, except for standard Alkaline batteries (e.g., AAA, AA, C, D, 9-Volt), must be placed in separate plastic bags or have their terminals taped with clear, non-conductive tape (e.g., packing or scotch tape). This is required to prevent a dangerous evolution of heat, short-circuiting, and damage to terminals caused by the contact with the terminals of another battery in the same container. Improperly-packaged batteries have caused a number of truck fires in recent years.

Storage/Packaging - All types of waste batteries must be placed in a container (plastic bucket, cardboard box, envelope, sealable plastic bag) while being accumulated prior to disposal. The container must be labeled "Waste Batteries".

Disposal - Use one of the following methods for disposal based on the volume of batteries in question:

- Campus Mail

Small amounts of waste batteries: place batteries into an Interdepartmental Mail envelope and send to EHS at Box 354.

- EHS Collection Request

Large amounts of waste batteries: submit an online a Chemical Disposal Request via [Salute](#) and EHS will collect the containers directly from your location.

10.16.2 Leaking Batteries

Leaking batteries may require special handling. Contact EHS to report leaking batteries and to obtain guidance on proper disposal.

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10.17 PHOTOGRAPHIC WASTE (SILVER)

Photographic processing wastes may contain silver which is considered a toxic heavy metal by the Environmental Protection Agency. Photo processing solutions and spent rinse waters are classified as hazardous wastes and must either be collected and managed as a Hazardous Waste or processed to remove the silver before drain disposal. All films and negatives must be collected and managed as Hazardous Waste.

10.17.1 Silver Recovery Processing

Depending on the quantity of waste generated, silver recovery processing may prove financially beneficial to a generator. Generators choosing to recover silver must procure the silver recovery equipment and associated services. Contact EHS to assist in the selection of the silver recovery equipment which matches the needs for the location being served. Greymart Environmental Services (<http://www.greymart.com>) is a New York City-based company which is capable of providing a variety of silver recovery systems, installation, and services to match specific needs. However, other companies which offer similar equipment and services are available.

Refer to the [EHS Update on Photographic Waste Management \(Silver\)](#) for additional information. Use the EHS Update and Tables 1 and 2 (in the EHS Update) to help choose the best silver recovery method for your circumstances.

10.18 SCRAP LEAD RECYCLING

Lead is found and/or utilized throughout the College. The two primary sources of scrap lead are from construction projects (e.g., old piping) and radiation shielding materials (e.g., bricks). Lead is a toxic heavy metal and in most cases regulated as a hazardous waste. However, through a federal exemption for scrap metal recycling, the New York State Department of Environmental Conservation allows the recycling of lead via approved scrap metal recyclers. This exempts the College from certain hazardous waste regulations regarding lead wastes, so long as they are recycled appropriately. As such, all scrap lead must be managed as detailed in this procedure and recycled via Environmental Health and Safety's approved scrap metal recycler.

10.18.1 Scrap Lead from Radiation Shielding Materials

Lead utilized for radiation shielding materials may be in the forms of bricks, foils, radioactive material shipper packaging, and patient vests during x-raying. Any lead not utilized for its intended purpose must be disposed of as follows:

Collect and Label: Generator collects scrap lead items and labels: "Scrap Lead for Recycle (DEC C7 Scrap Metal Exemption)"

Health Physics Survey: Generator contacts Environmental Health and Safety to have the scrap lead surveyed to ensure no radioactive contamination exists. Any scrap lead found to contain radioactive contamination must be decontaminated as required by Health Physics protocols. Members of the EHS Health Physics unit label each of the items to certify that the lead materials do not contain any radioactive contamination. EHS will only collect scrap lead materials which contain this label.

Request Collection: Once Health Physics has certified the scrap lead as having no radioactive contamination, the generator completes an online Chemical Disposal Request via [Salute](#) with the following statement added to the Comments field: "Scrap lead was surveyed by Radiation Safety, and no radioactive contamination was observed."

EHS Recycles: EHS collects the scrap lead from the generator and recycles the lead with an approved scrap metal recycler.

10.18.2 Scrap Lead from Construction Projects

Scrap lead associated with construction projects may include old piping and other related wastes/debris. Project Managers must contact EHS to coordinate scrap lead management, collection, storage, and recycling. Under no circumstances can scrap lead be removed from the College without EHS' approval. At a minimum, scrap lead from construction projects must be managed as follows:

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Notify EHS: Project Manager notifies EHS during the project's pre-bid phase that scrap lead will be generated.

Engage Approved Vendor: EHS will provide the Project Manager with the EHS-approved scrap metal recycler information to establish an account for the project.

Collect and Label: Scrap lead must be collected and stored securely to prevent unauthorized access and migration of lead contamination. Scrap lead is labeled: "Scrap Lead for Recycle (DEC C7 Scrap Metal Exemption)"

Recycled by Approved Vendor: Scrap lead generated at the College must be recycled by the EHS-approved scrap metal recycler.

Paperwork: Project Manager provides EHS with copies of shipping documents.

10.19 DISPOSAL OF UNKNOWNNS

If the identity of a chemical cannot be ascertained, this chemical must be handled by EHS as an **unknown**. **Unknown chemicals are considered to be extremely dangerous, because of the lack of information available regarding reactivity, physical stability, and decomposition by-products.** Since some chemicals can develop reactive moieties around caps or ground glass stoppers, never open an unknown chemical container. To remove the unknown compound, provide EHS with any information you may have regarding the material. EHS retains a contractor in reactive hazard chemical management, who will safely open and test the materials.

11.0 Training

11.1 EHS SAFETY TRAINING

EHS waste disposal procedures are incorporated into EHS safety training programs including but not limited to:

- Laboratory Safety
- Clinical and General Safety
- Service Department Safety Training (e.g., Engineering and Maintenance, Housekeeping, Printing and Duplicating)

Refer to the [EHS Instructor-Led Training](#) website for a description of these training programs.

11.2 REGULATED MEDICAL WASTE SHIPPER TRAINING

The US Department of Transportation (DOT) classifies Regulated Medical Waste as a hazardous material.

Personnel who prepare packaging/shipments and sign shipping documents (e.g., Medical Waste Tracking Forms) are required to be DOT-trained. Regulated Medical waste shipper training satisfies requirement's to sign prepare packing/shipments and sign shipments. This training is required every three years and is available online and in person.

Detailed information on the [Regulated Medical Waste Shipper Training](#) and registration instructions are available on the EHS website.

11.3 RADIOACTIVE WASTE TRAINING

All generators of radioactive wastes should contact EHS Health Physics to determine the appropriate training required.

12.0 Record Retention, Availability, and Revisions

12.1 RECORD RETENTION

12.1.1 EHS Training Records

EHS maintains training records for EHS safety training programs and sessions provided.

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12.1.2 Medical Waste Tracking Forms

The Shipper is responsible for maintaining and retaining Medical Waste Tracking Forms on-site for a minimum of three (3) years from the date of the shipment and shall be available for inspection and copying by the Department.

12.2 PROGRAM REVISIONS

This Procedure will be reviewed and updated as needed to reflect changing regulations and circumstances. The most current copy of this Procedure is available on the EHS website, or by contacting EHS if internet access is not available.

13.0 References

13.1 FEDERAL

- National Institute of Occupation Safety and Health (NIOSH) 1979 Registry of Toxic Effects of Chemical Substances
- US Department of Transportation (USDOT) Pipeline and Hazardous Materials Administration; Battery Safety Compliance Advisory
- US Drug Enforcement Agency (USDEA) Title 21 CFR Part 1300-1308
- US Environmental Protection Agency (USEPA) - 40 CFR 262 Protection of Environment, Standards Applicable to Generators of Hazardous Waste.
- USEPA 40 CFR 401.15 – Toxic Pollutants

13.2 STATE

- NYS Department of Environmental Conservation (NYSDEC) 6 NYCRR Parts 370 through 374 and 376 – Hazardous Waste Disposal
- NYSDEC 6 NYCRR Subpart 374-3: Standards for Universal Wastes
- NYSDEC 6 NYCRR 371.1(c)(7) – prior notification for scrap metal exemption
- NYS Department of Health (NYSDOH), Statutory Authority; Public Health Law, Sec 225, NYCRR Title 10, Part 80 – Rules and Regulations on Controlled Substances
(http://www.health.ny.gov/regulations/controlled_substance/part/80/docs/80.pdf)
- NYSDOH Article 33 of the New York State Public Health Law
(http://www.health.state.ny.us/professionals/narcotic/docs/article_33_controlled_substances_act.pdf)
- NYSDOH 10 NYCRR Part 70 – Regulated Medical Waste
- NYS Law ECL 27, Title 21: Mercury-Added Consumer Products Law

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13.3 LOCAL

- NYC Department of Environmental Protection (NYCDEP) Chapter 19 – Use of the Public Sewers

13.4 OTHER

- Armour, Margaret-Ann. Hazardous Laboratory Chemicals Disposal Guide, 3rd Edition.
“Managing Pharmaceutical Hazardous Waste in the Hospital” by Environmental Health & Engineering.
- Susan M. Morgan, Erik A. Talley, Mohammed Z. Rahman and Keith E. Morgan; “Need for & Efficiency of Silver Recovery, or Silver Sampling Faux Pas & Fundamental Conclusions” presented at the 16th College and University Hazardous Waste Conference on July 20, 1998, in New Orleans, LA.
- Stericycle ® - “Managing Antineoplastic (Chemotherapy) Waste in New York State”, May 2004

13.5 EHS WEB RESOURCES

- Acutely Toxic Chemicals List
http://ehs.weill.cornell.edu/sites/default/files/acute_waste_codes.pdf
- Salute Safety Systems – Chemical & Sharps Waste Collections
https://ehs.salutesafety.com/users/sign_in
- Chemical Waste Audit Program
<http://ehs.weill.cornell.edu/waste-disposal/chemical-waste/chemical-waste-audit-program>
- EHS Safety Trainings
<http://ehs.weill.cornell.edu/training>
- RMW Shipper Trainings
<https://ehs.weill.cornell.edu/training/regulated-medical-waste>
- Non-Hazardous Chemical List
<http://ehs.weill.cornell.edu/sites/default/files/nonhazchemical.pdf>
- Radiation Waste Disposal Request Form
http://ehs.weill.cornell.edu/sites/default/files/raddisposalform_0.pdf

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APPENDIX A – Non-Hazardous Chemical List

The most current version of the Non-Hazardous Chemical List is available electronically on the EHS website at <http://ehs.weill.cornell.edu/waste-disposal/drain-trash-disposal>.

Non-Hazardous Chemical Name	CAS #
Acacia Gum	9000-01-5
Acetate Buffer (Acetate Kinase)	9027-42-3
Agar	9002-18-0
Agarose	9012-36-6
Alanine, DL-	302-72-7
Alanine, L-	56-41-7
Alanine-D	338-69-2
Algin	9005-38-3
Alginic Acid	9005-32-7
Alginic Acid, Sodium Salt	9005-38-3
Aloe Gum	67479-27-0
Aloe-Emodin	481-72-1
Alumina	1344-28-1
Alumin-Ar Cc-10 100-200 Mesh	1344-28-1
Aluminum Hydroxide Hydrate	21645-51-2
Aluminum Oxide	1344-28-1
Aluminum Oxide, Acidic	1344-28-1
Aluminum Oxide, Activated	1344-28-1
Aluminum Oxide, Basic	1344-28-1
Aluminum Silicate	12141-46-7
Aluminum Sodium Sulfate	10102-71-3
Aluminum Sulfate Anhydrous, Solid	10043-01-3
Alundum	1344-28-1
Amber	9000-02-6
Amberlite Ira-410cp	9002-26-0
Ambilhar	61-57-4
Amino Acids	29022-11-5
Aminoacetic Acid	56-40-6
Aminonaphthol Sulfonic Acid	87-02-5
Aminosalicic Acid,5-	89-57-6
Amioca	9037-22-3

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Non-Hazardous Chemical Name	CAS #
Ammonium Phosphate Monobasic	7722-76-1
Ammonium Phosphate, Dibasic	7783-28-0
Ammonium Salicylate	528-94-9
Ammonium Stearate	1002-89-7
Ammonium Sulfate	7783-20-2
Ammonium Valerate	42739-38-8
Amylopectin	9037-22-3
Anilinophenol, P-	122-37-2
Ansolsen	52-62-0
Anti Oxidant 2246	119-47-1
Aquacide I, Calbiochem	9004-32-4
Aquacide II, Calbiochem	9004-32-4
Arabinose, D-	28697-53-2
Arabinose, L-(+)-	87-72-9
Arginine Hydrochloride	1119-34-2
Arginine, L-	74-79-3
Asafetida Gum	9000-04-8
Ascorbic Acid, L-	50-81-7
Asparaginase, L-	9015-68-3
Asparagine Hydrate, (L)-	5794-13-8
Asparagine, L-	70-47-3
Aspartic Acid, D-	1783-96-6
Aspartic Acid, DI-	617-45-8
Aspartic Acid, L-	56-84-8
Azauracil, 6-	461-89-2
Azauridine, 6-	54-25-1
Behenic Acid	112-85-6
Bentonite	12141-46-7
Benzoyl Acrylic Acid-3	18507-29-4
Bicinchoninic acid Dipotassium Salt, 2,2'-	63451-34-3
Bio-Gel A	9012-36-6
Bis(2-hydroxyethyl)amino-tris(hydroxymethyl)methane	6976-37-0
Bis(2-Ethoxyethyl)Phthalate	117-82-8
Bis(2-N-Butoxyethyl)-Phthalate	117-83-9

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Non-Hazardous Chemical Name	CAS #
Bismuth Citrate	813-93-4
B-Lactoglobulin	50863-92-8
Bleach ($\leq 10\%$)	
Boileezers (Boiling Chips)	1344-28-1
Bone Flour	7758-87-4
Borax, Anhydrous	1330-43-4
Borneol	507-70-0
Boron Carbide	12069-32-8
Bromo-Alpha-Ergocryptine Methane Sulfonate, 2-	22260-51-1
Butyl Benzoate	136-60-7
Butyl Phenoxy Iso Propyl 2-Chloroethyl Sulfite	140-57-8
Butyrylthiocholine Chloride	2206-63-7
Cab-O-Sil	7631-86-9
Calcium Acetate	62-54-4
Calcium Borate	12007-56-6
Calcium Carbonate	471-34-1
Calcium Chloride	10043-52-4
Calcium Chloride Dihydrate	10035-04-8
Calcium Citrate	813-94-5
Calcium Disodium EDTA	62-33-9
Calcium Disodium Versenate	62-33-9
Calcium Gluconate	299-28-5
Calcium Iodide	10102-68-8
Calcium Lactate	814-80-2
Calcium Lignosulfonate	8061-52-7
Calcium Oleate	142-17-6
Calcium Pantothenate	137-08-6
Calcium Phosphate, Dibasic	7789-77-7
Calcium Phosphate, Monobasic	7758-23-8
Calcium Phosphate, Tribasic	7758-87-4
Calcium Sulfate	7778-18-9
Calcium Sulfate Dihydrate	10101-41-4
Calcofluor- White	133-66-4
Carbolon	409-21-2

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Non-Hazardous Chemical Name	CAS #
Carbon Decolorizing	7440-44-0
Carbon Lampblack	133-86-4
Carborundum	409-21-2
Carboxymethyl Cellulose	9004-32-4
Carboxymethyl Cellulose, Sodium Salt	9004-32-4
Carnitine Hydrochloride	461-05-2
Carotene, Trans-Beta-	7235-40-7
Casein, Sodium Complex	9005-46-3
Catechu Gum	69599-33-3
Cefotaxime	64485-93-4
Celite	68855-54-9
Cellex	9004-32-4
Charcoal, Animal Bone	16291-96-6
Chlorophyll	1406-65-1
Chlorthiazide	58-94-6
Cholesteryl Acetate	604-35-3
Choline	62-49-7
Choline Chloride	67-48-1
Chromosorb W-Aw-Dmcs	61790-53-2
Chromosorb W-Hp	61790-53-2
Citric Acid	77-92-9
Citric Acid Monohydrate	5949-29-1
Citric Acid Trisodium Salt Dihydrate	68-04-2
Clara-Diastase	9001-11-0
Cm Cellulose	9000-11-7
Coconut Charcoal	68647-86-9
Comet Cleanser	1330-43-4
Corn Syrup	8029-43-4
Creatinine	60-27-5
Cristobalite	14464-46-1
Cyanocobalamin	68-19-9
Cyclodextrin Hydrate, Alpha-	10016-20-3
Cyclohexaamylose	10016-20-3
Cystine	923-32-0

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Non-Hazardous Chemical Name	CAS #
Cystine, DI-	923-32-0
Cystine, L-	56-89-3
Cytidine 5'-Diphosphoglucose	102601-30-9
Cytidine-3'-Monophosphate	84-52-6
Cytidylic Acid, 3'-	84-52-6
Cytodex 3, Beaded Micro Carrier	88895-19-6
Cytosine	71-30-7
Dansylglycine Free Acid	1091-85-6
Darran #404	8061-52-7
Dextran Sulfate	9011-18-1
Dextran T 70	9004-54-0
Dextrin	9004-53-9
Dextrose	492-62-6
Diatase (Of Malt)	900-02-4
Diatrizoate Sodium	737-31-5
Dibutyl Adipate	105-99-7
Dibutyl Fumarate	105-75-9
Dibutyl Maleate	105-76-0
Dichlorophenamide	120-97-8
Dihydroxyphenyl)-L-Alanine], [3-(3,4-	59-92-7
Diisopropyl Phthalate	605-45-8
Dimethyl Urea, 1,3-	96-31-1
Dimethylaniline HCl	51786-53-9
Dimethylglycine HCl, N,N-	2491-06-7
Di-N-Butyl Sebacate	109-43-3
Diphospho-D-Glyceric Acid, 2,3-	62868-79-5
Dipotassium Phosphate	7758-11-4
Dipyridamole	58-32-2
Disodium Phosphate	7758-79-4
Disodium Pyrophosphate	7758-16-9
Disodium Sulfate	7757-82-6
Distearin, DL-1,2-	51063-97-9
DI-Alpha-Glycerophosphate	3325-00-6
Dowtherm A	8004-13-5

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Non-Hazardous Chemical Name	CAS #
Enalapril Maleate	76095-16-4
Epon 1001 Resin	25068-38-6
Epsom Salt	10034-99-8
Escalol 106	136-44-7
Ethylenediamine Tetraacetic Acid (EDTA)	60-00-4
Ethylhexyl Acetate, 2-	103-09-3
Ethyl-1,3-Hexanediol, 2-	94-96-2
Ferric Citrate	2338-05-8
Ferric Phosphate	10045-86-0
Ferrous Gluconate	299-29-6
Ferrous Oxide	1345-25-1
Fibrin	9001-31-4
Fibrinolysin	9001-90-5
Ficin	9001-33-6
Flazo Orange	3566-94-7
Florisol (Magnesium Silicate)	1343-88-0
Fluorescein	2321-07-5
Forvar, Solid	9003-33-2
Fructose 1,6-Diphosphate Disodium Salt	26177-85-5
Fructose, D-	57-48-7
Fructose-6-Phosphate	643-13-0
Fucose, L-	2438-80-4
Galactose, D-(+)-	59-23-4
Galactric Acid	526-99-8
Gelatin	9000-70-8
Gluconic Acid	527-07-1
Gluconic Acid, D-Sodium Salt	527-07-1
Gluconic Acid, Potassium Salt	299-27-4
Glucose 6-Phosphate, D-	56-73-5
Glucose Pentaacetate, Alpha-D-	604-68-2
Glucose Pentaacetate, Beta-D-	604-69-3
Glucose Reagent	50-99-7
Glucose, Alpha-D	492-62-6
Glucose, D-(+)-	50-99-7

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Non-Hazardous Chemical Name	CAS #
Glucose-1-Phosphate Dipotassium, Alpha, D-	5996-14-5
Glutamic Acid, L-	56-86-0
Glutamine, L-	56-85-9
Glutaric Acid	110-94-1
Glutathione Reduced Form	70-18-8
Glutathione S-Transferase	50812-37-8
Glycerol 2-Phosphate, Disodium Salt Hydrate	819-83-0
Glyceryl Guaiacolate	93-14-1
Glyceryl Monostearate	31566-31-1
Glycine	56-40-6
Glycogen	9005-79-2
Graphite Powder	7782-42-5
Guaiac Resin	9000-29-7
Guanine	73-40-5
Guar Gum	9000-30-0
Gum Arabic	9000-01-5
Gum Benzoin	9000-05-9
Gum Elemi	9000-75-3
Gum Ghatti	9000-28-6
Gum Guaic	9000-29-7
Gum Tragacanth	9000-65-1
Gypsum	10101-41-4
Hemoglobin	9008-02-0
Heparin	9005-49-6
Histamine	51-45-6
Histamine Dihydrochloride	56-92-8
Histidine Monohydrochloride Mononhydrate, D-	6341-24-8
Hsa Minispheres	9000-70-8
Hydrogen Peroxide (less than or equal to 3%)	7722-84-1
(Hydroxypropyl)methyl Cellulose	9004-65-3
Hydroxy-3-Methoxybenzoic Acid, 4-	121-34-6
Hydroxyethyl Cellulose	9004-62-0
Hydroxylapatite	1306-06-5
Hydroxy-L-Proline, Cis-4-	618-27-9

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Non-Hazardous Chemical Name	CAS #
Hydroxy-L-Proline, Trans-4-	51-35-4
Hypaque	737-31-5
Imidazole, 1-Methyl-2-	60-56-0
Iminodipropionitrile, 3,3-	111-94-4
Indican	737-31-5
Inosine, (-)-	58-63-9
Inositol	87-89-8
Iron Citrate	2338-05-8
Isocitric Acid, Trisodium Salt Hydrate, DI-	1637-73-6
Isocitric Dehydrogenase	9028-48-2
Isoleucine, L-	73-32-5
Kaolin	1332-58-7
Karaya Gum	9000-36-6
Keratin	9008-18-8
Klucel	9004-64-2
Lactalbumin Enzymatic Hydrolysate	9073-60-3
Lactobionic Acid	3847-29-8
Lactose Monohydrate	63-42-3
Lactose, Beta-D-	63-42-3
Lactulose	4618-18-2
Lanolin, Wool Fat	8006-54-0
Lecithin	8002-43-5
Leucine, D-	328-38-1
Leucine, DI-	328-39-2
Leucine, L-	61-90-5
Leupeptin	103476-89-7
Levulose	57-48-7
L-Glutamic Acid, Monosodium Salt	142-47-2
Limestone, Crushed	1317-65-3
Litmus Blue	1393-92-6
Litmus, Indicator	1393-92-6
Lysine, L-	56-87-1
Lysine Monohydrochloride, DI-	70-53-1
Lysine Monohydrochloride, L-	657-27-2

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Non-Hazardous Chemical Name	CAS #
Lysozyme from Chicken Egg White	12650-88-3
Magnesium Acetate	142-72-3
Magnesium Carbonate Hydrate	546-93-0
Magnesium Carbonate Hydroxide	3409-82-0
Magnesium Chloride	7786-30-3
Magnesium Oxide	1309-48-4
Magnesium Phosphate Tribase	7757-86-0
Magnesium Sulfate	7487-88-9
Magnesium Sulfate Heptahydrate	10034-99-8
Malt Extract	8002-48-0
Maltodextrin	9050-36-6
Maltose Monohydrate, D-	6363-53-7
Mannitol, D-	69-65-8
Methionine, D-	348-67-4
Methionine, DI-	59-51-8
Methionine, L-	63-68-3
Methyl Cellulose	9004-67-5
Methyl Cysteine-S	7728-98-5
Methyl Histidine, L-1-	15507-76-3
Methyl Laurate	111-82-0
Methyl-L-Histidine	368-16-1
Methyl-Alpha-D-Mannoside	617-04-9
Monostearin	22610-63-5
Mucic Acid	526-99-8
Myoglobin	9008-45-1
Myrrh Gum	900-04-5
Naphthoflavone, Alpha-	604-59-1
Niacin	59-67-6
Niacinamide	98-92-0
Nicotinamide	98-92-0
Nicotinamide Adenine Dinucleotide Phosphate	53-59-8
Nicotinic Acid	59-67-6
Nylon	63428-83-1
Ofloxacin	82419-36-1

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Non-Hazardous Chemical Name	CAS #
Olibanum Gum	8050-07-5
Pancreatin	8049-47-6
Papain	9001-73-4
Penbutolol Sulfate	38363-32-5
Pepsin Powder	9001-75-6
Phenyl-5ehtyl-Hexahydropyrimidine-4,6-Dione,5-	125-33-7
Phenylalanine, D-	673-06-3
Phenylalanine, L-	63-91-2
Phenylethyl-(2) Acetate	103-45-7
Phosphalase, Acid	9001-77-8
Phosphate Buffered Saline (PBS)	
Phosphatidyl Choline, L-Alpha-	8002-43-5
Phosphodiesterase 3-5-Cyclic Nucleotide	9040-59-9
Phytonadione	84-80-0
Pimozide	2062-78-4
Piperazine Citrate	144-29-6
Pirenzepine Hydrochloride Hydrate	29868-97-1
Plasmin	9001-90-5
Poly (3-Hydroxy Butyric Acid)	26063-00-3
Poly Ethylene Oxide	25322-68-3
Poly Propylene, Isotactic	25085-53-4
Poly(Ethylene Glycol), Solid	25322-68-3
Poly(Ethylene), Solid	9002-88-4
Poly(Isobutylene), Solid	9003-27-4
Poly(Isoprene), Solid	9003-31-0
Poly(Methyl Methacrylate), Solid	9011-14-7
Poly(Sodium 4-Styrene Sulfonate)	25704-18-1
Poly(Vinyl Alcohol), Solid	9002-89-5
Poly(Vinyl Formal), Solid	9003-33-2
Poly(Vinyl Pyrrolidone), Solid	9003-39-8
Polyacrylic Acid, Solid	9003-01-4
Polyanetholsulfonic Acid, Sodium Salt	63589-56-0
Polybutadiene, Cis-, Solid	9003-17-2
Polybutene	9003-28-5

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Non-Hazardous Chemical Name	CAS #
Polyethylene Glycol	37225-26-6
Polyethylene Glycol 8000	25322-68-3
Polyvinyl Acetate, Solid	9003-20-7
Potassium Acetate	127-08-2
Potassium Bicarbonate	298-14-6
Potassium Bisulfite	1310-61-8
Potassium Bitartrate	868-14-4
Potassium Carbonate	584-08-7
Potassium Chloride	7447-40-7
Potassium Citrate	866-84-2
Potassium Gibberellate	125-67-7
Potassium Gluconate	299-27-4
Potassium Hydrogen Sulfite	1310-61-8
Potassium Hydrogen Tartrate	868-14-4
Potassium Iodide	7681-11-0
Potassium Phosphate, Dibasic, Anhydrous	7758-11-4
Potassium Phosphate, Dibasic, Trihydrate	16788-57-1
Potassium Phosphate, Monobasic, Anhydrous	7778-77-0
Potassium Phosphate, Tribasic	7778-53-2
Potassium Pyrophosphate, Tetra-	7320-34-5
Potassium Sodium Tartrate	304-59-6
Potassium Sulfate	7778-80-5
Potassium Tetraborate Tetrahydrate	12045-78-2
Povidone	9003-39-8
Procion Brilliant Red	17804-49-8
Proteidase	9014-01-1
Protoporphyrin Ix, Sodium Salt	50865-01-5
Pth-Aspartic Acid	5624-13-5
Pth-Glutamic Acid	562-47-1
Putrescine Dihydrochloride	333-93-7
Pvp	9003-39-8
Pyridoxal Phosphate	54-47-7
Pyrite	1309-36-0
Quartz	14808-60-7

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Non-Hazardous Chemical Name	CAS #
Rennase	9001-98-3
Rennin	9001-98-3
Resacetophenone	89-84-9
Retinyl Acetate	127-47-9
Riboflavin	83-88-5
Riboflavin-5-Phosphate	146-17-8
Ribose	24259-59-4
Ribose Nucleic Acid	9014-25-9
Ribose, D-	50-69-1
Rongalite	149-44-0
Rosin, Powder	8050-09-7
Saccharose	57-50-1
Salicylic Acid	69-72-7
Sandimmun	59865-43-3
Senna Gum	51434-18-5
Serine, DI-	302-84-1
Serine, L-	56-45-1
Shellac Gum	9000-59-3
Silicic Acid	7699-41-4
Silicic Acid Sodium Salt	13440-90-8
Silicon Carbide	409-21-2
Silicon Dioxide	7631-86-9
Silicon Dioxide, Amorphous	112945-52-5
Silicone Rubber, Solid	9016-00-6
Soda Ash	497-19-8
Sodium 2-Ethylhexyl Sulfate	126-92-1
Sodium Acetate	127-09-3
Sodium Acetate Trihydrate	6131-90-4
Sodium Ascorbate	134-03-2
Sodium Bicarbonate	144-55-8
Sodium Borate, Anhydrous	1330-43-4
Sodium Carbonate	497-19-8
Sodium Carbonate, Decahydrate	6132-02-1
Sodium Carbonate, Monohydrate	5968-11-6

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Non-Hazardous Chemical Name	CAS #
Sodium Cellulose Phosphate	9038-41-9
Sodium Chloride	7647-14-5
Sodium Cholate	361-09-1
Sodium Citrate	68-04-2
Sodium Cloxacillin	642-78-4
Sodium Glucuronate	7182-77-6
Sodium Glutamate	142-47-2
Sodium Hyaluronate	9067-32-7
Sodium Iodide	7681-82-5
Sodium Lactate	72-17-3
Sodium L-Aspartate	5598-53-8
Sodium Lignosulfonate	8061-51-6
Sodium Metaphosphate	10361-03-2
Sodium Monofluorophosphate	10163-15-2
Sodium Nitrobenzene Sulfonate	127-68-4
Sodium Nucleinate	9014-25-9
Sodium Oleate	143-19-1
Sodium Phosphate, Dibasic	10039-32-4
Sodium Phosphate, Dibasic, Anhydrous	7558-79-4
Sodium Phosphate, Dibasic, Dodecahydrate	10039-32-4
Sodium Phosphate, Dibasic, Heptahydrate	7782-85-6
Sodium Phosphate, Monobasic, Anhydrous	7558-80-7
Sodium Phosphate, Monobasic, Monohydrate	10049-21-5
Sodium Phosphate, Tribasic, Dodecahydrate	10101-89-0
Sodium Polymetaphosphate	50813-16-6
Sodium Polymethacrylate	54193-36-1
Sodium Polystyrene Sulfonate	9080-79-9
Sodium Potassium Phosphate	7782-69-6
Sodium Potassium Tartrate	304-59-6
Sodium Pyrophosphate	7722-88-5
Sodium Silicate	1344-09-8
Sodium Sulfadiazine	547-32-0
Sodium Sulfate	7767-82-6
Sodium Sulfate, Anhydrous	7757-82-6

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Non-Hazardous Chemical Name	CAS #
Sodium Tartrate	868-18-8
Sodium Tetraborate, Anhydrous	1330-43-4
Sodium Tetrphosphate	14986-84-6
Sodium Titanate	12034-34-3
Sodium Trimetaphosphate	7785-84-4
Sodium Tripolyphosphate	13573-18-7
Sodium Tripolyphosphate	7758-29-4
Sodium Tungstate	13472-45-2
Sorbitol, D-	50-70-4
Sorbose, L-(-)-	87-79-6
Spectra-Sorb Uv-9	131-57-7
SSC (Sodium Chloride, Sodium Citrate) Buffer	
SSPE (Sodium Chloride, Sodium Phosphate, EDTA) Buffer	
Starch, Electrophoresis	9005-25-8
Starch, Soluble	9005-84-9
Steapsin	9001-62-1
Strontium Carbonate	1633-05-2
Succinic Semialdehyde	692-29-5
Sucrose	57-50-1
Sulfadoxine	2447-57-6
Sulfamylon	138-37-4
Suloctidil	54767-75-8
Talc	14807-96-6
Tannic Acid	1401-55-4
Tantalum Carbide	12070-06-3
Tartaric Acid, L(+)-	87-69-4
TAE (Tris, Acetic Acid, EDTA) Buffer	
TBE (Tris, Boric Acid, EDTA) Buffer	
TE (Tris, EDTA) Buffer	
Tetrahydroxybenzophenol,2,2,4,4-	13-15-5
Tetrasodium Pyrophosphate	7722-88-5
Thiamine Hydrochloride	67-03-8
Thienyl-DI-A-Alanine-Z	139-86-6
Threonine, D-	632-20-2

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Non-Hazardous Chemical Name	CAS #
Threonine, DL-	80-68-2
Threonine, L-	72-19-5
Thyodene	9005-84-9
Titanium Dioxide	13463-67-7
Tocopherol, Alpha-	59-02-9
Tocopheryl Acetate, DL-Alpha-	7695-91-2
Tolazoline Hydrochloride	59-97-2
Tragacanth Powder	9000-65-1
Tri(B-Chloroethyl) Phosphate	115-96-8
Tricalcium Phosphate	7758-87-4
Triethylene Glycol Diacetate	111-21-7
Trifluorothymine	54-20-6
Triphosphopyridine Nucleotide, Sodium Salt	53-59-8
Tripropyleneglycolmethyl Ether	25498-49-1
Tris	
Trisodium Phosphate, Activator	7601-54-9
Trypsin	9002-07-7
Trypsin Inhibitor	9087-70-1
Tyrosine, D-	556-02-5
Tyrosine, DL-	556-03-6
Tyrosine, L-	60-18-4
Urease	9002-13-5
Urecholine	590-63-6
Uricase	9002-12-4
Uridine	58-96-8
Valine, L-	72-18-4
Vanillic Acid	121-34-6
Vanillin	121-33-5
Variton	62-97-5
Vinyl Resin	9005-09-8
Vitamin B12	68-19-9
Vitamin B2	83-88-5
Vitamin E	59-02-9
Vitamin E	7695-91-2

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Non-Hazardous Chemical Name	CAS #
Vitamin K-5	83-70-5
Vp-16	33419-42-0
Xanthine	69-89-6
Xylan	9014-63-5
Yeast Extract	8013-01-2
Zein	9010-66-6
Zirconium Oxychloride	7699-43-6

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APPENDIX B – Acutely Toxic Chemical List

The Acutely Toxic Chemical List is available electronically on the EHS website at:

http://ehs.weill.cornell.edu/sites/default/files/acute_waste_codes.pdf.

United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Acetaldehyde, chloro-	P023	107-20-0
Acetamide, N-(aminothioxomethyl)-	P002	591-08-2
Acetamide, 2-fluoro-	P057	640-19-7
Acetic acid, fluoro-, sodium salt	P058	62-74-8
1-Acetyl-2-thiourea	P002	591-08-2
Acrolein	P003	107-02-8
Aldicarb	P070	116-06-3
Aldicarb sulfone.	P203	1646-88-4
Aldrin	P004	309-00-2
Allyl alcohol	P005	107-18-6
Aluminum phosphide (R,T)	P006	20859-73-8
5-(Aminomethyl)-3-isoxazolol	P007	2763-96-4
4-Aminopyridine	P008	504-24-5
Ammonium picrate (R)	P009	131-74-8
Ammonium vanadate	P119	7803-55-6
Argentate(1-), bis(cyano-C)-, potassium	P099	506-61-6
Arsenic acid H ₃ AsO ₄	P010	7778-39-4
Arsenic oxide As ₂ O ₃	P012	1327-53-3
Arsenic oxide As ₂ O ₅	P011	1303-28-2
Arsenic pentoxide	P011	1303-28-2
Arsenic trioxide	P012	1327-53-3
Arsine, diethyl-	P038	692-42-2
Arsonous dichloride, phenyl-	P036	696-28-6
Aziridine	P054	151-56-4
Aziridine, 2-methyl-	P067	75-55-8
Barium cyanide	P013	542-62-1
Benzenamine, 4-chloro-	P024	106-47-8
Benzenamine, 4-nitro-	P077	100-01-6
Benzene, (chloromethyl)-	P028	100-44-7
1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-	P042	51-43-4
Benzeneethanamine, alpha, alpha-dimethyl-	P046	122-09-8

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Benzenethiol	P014	108-98-5
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.	P127	1563-66-2
Benzoic acid, 2-hydroxy-, compd. W (3aS-cis)-1,2,3a,8,8a- hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1)	P188	57-64-7
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1- phenylbutyl)-, & salts, when present at concentrations greater than 0.3%	P001	81-81-2
Benzyl chloride	P028	100-44-7
Beryllium Powder	P015	7440-41-7
Bromoacetone	P017	598-31-2
Brucine	P018	357-57-3
2-Butanone, 3,3-dimethyl- 1-(methylthio)-,O- [(methylamino)carbonyl] oxime	P045	39196-18-4
Calcium cyanide	P021	592-01-8
Calcium cyanide Ca(CN) ₂	P021	592-01-8
Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2- dimethyl-7-benzofuranyl ester	P189	55285-14-8
Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5- methyl-1H- pyrazol-3-yl ester.	P191	644-64-4
Carbamic acid, dimethyl-, 3-methyl-1(1-methylethyl)-1H- pyrazol-5-yl ester.	P192	119-38-0
Carbamic acid, methyl-, 3-methylphenyl ester.	P190	1129-41-5
Carbofuran.	P127	1563-66-2
Carbon disulfide	P022	75-15-0
Carbonic dichloride	P095	75-44-5
Carbosulfan	P189	55285-14-8
Chloroacetaldehyde	P023	107-20-0
p-Chloroaniline	P024	106-47-8
1-(o-Chlorophenyl)thiourea	P026	5344-82-1
3-Chloropropionitrile	P027	542-76-7
Copper cyanide	P029	544-92-3
Copper cyanide Cu(CN)	P029	544-92-3
m-Cumenyl methylcarbamate	P202	64-00-6
Cyanides (soluble cyanide salts), not otherwise specified	P030	
Cyanogen	P031	460-19-5

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Cyanogen chloride	P033	506-77-4
Cyanogen chloride (CN)Cl	P033	506-77-4
2-Cyclohexyl-4,6-dinitrophenol	P034	131-89-5
Dichloromethyl ether	P016	542-88-1
Dichlorophenylarsine	P036	696-28-6
Dieldrin	P037	60-57-1
Diethylarsine	P038	692-42-2
Diethyl-p-nitrophenyl phosphate	P041	311-45-5
O,O-Diethyl O-pyrazinyl phosphorothioate	P040	297-97-2
Diisopropylfluorophosphate (DFP)	P043	55-91-4
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa-chloro- 1,4,4a,5,8,8a,-hexahydro-, (1alpha, 4alpha,4abeta,5alpha,8alpha,8abeta)-	P004	309-00-2
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro- 1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha, 4abeta,5beta,8beta,8abeta)-	P060	465-73-6
2,7:3,6-Dimethanonaphth[2,3-b]oxirene 3,4,5,6,9,9- hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1 a alpha,2beta,2aalpha, 3beta,6beta, 6aalpha,7beta, 7aalpha)-	P037	60-57-1
2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9- hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha, 6alpha,6abeta,7beta, 7aalpha)-, & metabolites	P051	72-20-8
Dimethoate	P044	60-51-5
alpha,alpha-Dimethylphenethylamine	P046	122-09-8
Dimetilan.	P191	644-64-4
4,6-Dinitro-o-cresol, & salts	P047	534-52-1
2,4-Dinitrophenol	P048	51-28-5
Dinoseb	P020	88-85-7
Diphosphoramidate, octamethyl-	P085	152-16-9
Diphosphoric acid, tetraethyl ester	P111	107-49-3
Disulfoton	P039	298-04-4
Dithiobiuret	P049	541-53-7
1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O- [(methylamino)-carbonyl]oxime.	P185	26419-73-8
Endosulfan	P050	115-29-7
Endothall	P088	145-73-3

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Endrin	P051	72-20-8
Endrin, & metabolites	P051	72-20-8
Epinephrine	P042	51-43-4
Ethanedinitrile	P031	460-19-5
Ethanimidothioic acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.	P194	23135-22-0
Ethanimidothioic acid, N-[[[(methylamino) carbonyl]oxy]-, methyl ester	P066	16752-77-5
Ethyl cyanide	P101	107-12-0
Ethyleneimine	P054	151-56-4
Famphur	P097	52-85-7
Fluorine	P056	7782-41-4
Fluoroacetamide	P057	640-19-7
Fluoroacetic acid, sodium salt	P058	62-74-8
Formetanate hydrochloride.	P198	23422-53-9
Formparanate.	P197	17702-57-7
Fulminic acid, mercury(2+) salt (R,T)	P065	628-86-4
Heptachlor	P059	76-44-8
Hexaethyl tetraphosphate	P062	757-58-4
Hydrazinecarbothioamide	P116	79-19-6
Hydrazine, methyl-	P068	60-34-4
Hydrocyanic acid	P063	74-90-8
Hydrogen cyanide	P063	74-90-8
Hydrogen phosphide	P096	7803-51-2
Isodrin	P060	465-73-6
Isolan.	P192	119-38-0
3-Isopropylphenyl N-methylcarbamate.	P202	64-00-6
3(2H)-Isoxazolone, 5-(aminomethyl)-	P007	2763-96-4
Manganese, bis(dimethylcarbamodithioato-S,S')-,	P196	15339-36-3
Manganese dimethyldithiocarbamate.	P196	15339-36-3
Mercury, (acetato-O)phenyl-	P092	62-38-4
Mercury fulminate (R,T)	P065	628-86-4
Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino)- carbonyl]oxy]phenyl]-, monohydrochloride	P198	23422-53-9

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-(methylamino) carbonyl]oxy]phenyl]-	P197	17702-57-7
Methanamine, N-methyl-N-nitroso-	P082	62-75-9
Methane, isocyanato-	P064	624-83-9
Methane, oxybis[chloro-	P016	542-88-1
Methane, tetranitro- (R)	P112	509-14-8
Methanethiol, trichloro-	P118	75-70-7
6,9-Methano-2,4, 3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	P050	115-29-7
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	P059	76-44-8
Methiocarb.	P199	2032-65-7
Methomyl	P066	16752-77-5
Methyl hydrazine	P068	60-34-4
Methyl isocyanate	P064	624-83-9
2-Methyl lactonitrile	P069	75-86-5
Methyl parathion	P071	298-00-0
Metolcarb.	P190	1129-41-5
Mexacarbate.	P128	315-18-4
alpha-Naphthylthiourea	P072	86-88-4
Nickel carbonyl	P073	13463-39-3
Nickel carbonyl Ni(CO) ₄ , (T-4)-	P073	13463-39-3
Nickel cyanide	P074	557-19-7
Nickel cyanide Ni(CN) ₂	P074	557-19-7
Nicotine, & salts	P075	54-11-5
Nitric oxide	P076	10102-43-9
p-Nitroaniline	P077	100-01-6
Nitrogen dioxide	P078	10102-44-0
Nitrogen oxide NO	P076	10102-43-9
Nitrogen oxide NO ₂	P078	10102-44-0
Nitroglycerine (R)	P081	55-63-0
N-Nitrosodimethylamine	P082	62-75-9
N-Nitrosomethylvinylamine	P084	4549-40-0
Octamethylpyrophosphoramidate	P085	152-16-9
Osmium oxide OsO ₄ , (T-4)-	P087	20816-12-0

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Osmium tetroxide	P087	20816-12-0
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	P088	145-73-3
Oxamyl.	P194	23135-22-0
Parathion	P089	56-38-2
Phenol, 2-cyclohexyl-4,6-dinitro-	P034	131-89-5
Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester).	P128	315-18-4
Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	P199	2032-65-7
Phenol, 3-(1-methylethyl)-, methyl carbamate.	P202	64-00-6
Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.	P201	2631-37-0
Phenol, 2,4-dinitro-	P048	51-28-5
Phenol, 2-methyl-4,6-dinitro-, & salts	P047	1534-52-1
Phenol, 2-(1-methylpropyl)-4,6-dinitro-	P020	88-85-7
Phenol, 2,4,6-trinitro-, ammonium salt (R)	P009	131-74-8
Phenylmercury acetate	P092	62-38-4
Phenylthiourea	P093	103-85-5
Phorate	P094	298-02-2
Phosgene	P095	75-44-5
Phosphine	P096	7803-51-2
Phosphoric acid, diethyl 4-nitrophenyl ester	P041	311-45-5
Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester	P039	298-04-4
Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	P094	298-02-2
Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	P044	60-51-5
Phosphorofluoridic acid, bis(1-methylethyl) ester	P043	55-91-4
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	P089	56-38-2
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	P040	297-97-2
Phosphorothioic acid, O-[4-[(dimethylamino) sulfonyl]phenyl] O,O-dimethyl ester	P097	52-85-7
Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester	P071	298-00-0
Physostigmine.	P204	57-47-6
Physostigmine salicylate.	P188	57-64-7
Plumbane, tetraethyl-	P110	78-00-2
Potassium cyanide	P098	151-50-8

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Potassium cyanide K(CN)	P098	151-50-8
Potassium silver cyanide	P099	506-61-6
Promecarb	P201	2631-37-0
Propanal, 2-methyl-2- (methylthio)-, O- [(methylamino)carbonyl]oxime	P070	116-06-3
Propanal, 2-methyl-2-(methyl-sulfonyl)-, O- [(methylamino)carbonyl] oxime.	P203	1646-88-4
Propanenitrile	P101	107-12-0
Propanenitrile, 3-chloro-	P027	542-76-7
Propanenitrile, 2-hydroxy-2-methyl-	P069	75-86-5
1,2,3-Propanetriol, trinitrate (R)	P081	55-63-0
2-Propanone, 1-bromo-	P017	598-31-2
Propargyl alcohol	P102	107-19-7
2-Propenal	P003	107-02-8
2-Propen-1-ol	P005	107-18-6
1,2-Propylenimine	P067	75-55-8
2-Propyn-1-ol	P102	107-19-7
4-Pyridinamine	P008	504-24-5
Pyridine, 3-(1-methyl- 2-pyrrolidinyl)-, (S)-, & salts	P075	54-11-5
Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a, 8- trimethyl-, methylcarbamate (ester), (3aS-cis)-.	P204	57-47-6
Selenious acid, dithallium(1+) salt	P114	12039-52-0
Selenourea	P103	630-10-4
Silver cyanide	P104	506-64-9
Silver cyanide Ag(CN)	P104	506-64-9
Sodium azide	P105	26628-22-8
Sodium cyanide	P106	143-33-9
Sodium cyanide Na(CN)	P106	143-33-9
Strychnidin-10-one, & salts	P108	157-24-9
Strychnidin-10-one, 2,3-dimethoxy-	P018	357-57-3
Strychnine, & salts	P108	157-24-9
Sulfuric acid, dithallium(1+) salt	P115	7446-18-6
Tetraethyldithio pyrophosphate	P109	3689-24-5
Tetraethyl lead	P110	78-00-2
Tetraethyl pyrophosphate	P111	107-49-3

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United States Environmental Protection Agency (EPA) Acutely Toxic Chemical Name	EPA Waste Code	CAS #
Tetranitromethane (R)	P112	509-14-8
Tetraphosphoric acid, hexaethyl ester	P062	757-58-4
Thallic oxide	P113	1314-32-5
Thallium oxide Tl_2O_3	P113	1314-32-5
Thallium(I) selenite	P114	2039-52-0
Thallium(I) sulfate	P115	7446-18-6
Thiodiphosphoric acid, tetraethyl ester	P109	3689-24-5
Thiofanox	P045	39196-18-4
Thioimidodicarbonic diamide $[(H_2N)C(S)]_2 NH$	P049	541-53-7
Thiophenol	P014	108-98-5
Thiosemicarbazide	P116	79-19-6
Thiourea, (2-chlorophenyl)-	P026	5344-82-1
Thiourea, 1-naphthalenyl-	P072	86-88-4
Thiourea, phenyl-	P093	103-85-5
Tirpate.	P185	26419-73-8
Toxaphene	P123	8001-35-2
Trichloromethanethiol	P118	75-70-7
Vanadic acid, ammonium salt	P119	7803-55-6
Vanadium oxide V_2O_5	P120	314-62-1
Vanadium pentoxide	P120	1314-62-1
Vinylamine, N-methyl-N-nitroso-	P084	4549-40-0
Warfarin, & salts, when present at concentrations greater than 0.3%	P001	81-81-2
Zinc cyanide	P121	557-21-1
Zinc cyanide $Zn(CN)_2$	P121	557-21-1
Zinc, bis(dimethylcarbamoedithioato-S,S')-,	P205	137-30-4
Zinc phosphide Zn_3P_2 , when present at concentrations greater than 10% (R,T)	P122	1314-84-7
Ziram.	P205	137-30-4

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Appendix D – Chemical Waste Self-Audit Program

The Chemical Waste Self-Audit is available electronically on the EHS website at:

<https://ehs.weill.cornell.edu/waste-disposal/chemical-waste/chemical-waste-audit-program>

See the below (continued on following page) for a printout of the form.

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Chemical Waste Self-Audit Form

DATE:	DEPT:	EHS REP:
TIME:	BLD/RM:	PI/Supervisor:
COMPLETED BY:		SIGNATURE:

	Item	Yes	No	N/A	Comments (including any applicable follow-up)
PPE	Eye protection used?				
	Protective clothing used?				
	Gloves used?				
	Feet entirely covered?				
Emergency Response	Chemical spill kit available?				
	Area clean and free from spills?				
	Chemicals stored with secondary containment?				
	Eyewash station available and working?				
	Shower available and accessible?				
Egress / Fire	Aisles uncluttered and w/o tripping hazard?				
	Exitways free and unobstructed?				
	Fire extinguishers available and unobstructed?				
	Fire extinguisher types appropriate to hazards?				
Storage Practices	Less than 1 Quart acutely toxic hazardous waste?				
	Less than 55G hazardous waste?				
	Containers securely closed when not in use?				
	No containers compromised?				
	Containers properly labeled?				
	Flammables away from sources of ignition?				
	Chemicals stored at or below eye level?				
	Chemicals segregated/stored properly?				
	Glass bottles stored above or off of floor?				
	No inherently waste-like chemicals in storage?				
	Waste is compatible with container?				

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	Item	Yes	No	N/A	Comments (including any applicable follow-up)
Management Practices	Waste Disposal Guide Available?				
	Collection request forms submitted for chemical waste?				
	Are chemical wastes stored at or near the point of generation?				
	Is an area designated for hazardous waste storage?				
	Food/Drink forbidden in chemical areas?				
	Training requirements met?				
	Warning signs posted?				
	Peroxide formers dated when received and disposed of or tested after expiration?				
	No container dated?				

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