

How to Manage Chemical Waste in the Laboratory

1. **IDENTIFY** the waste.
2. Locate an appropriately sized **CONTAINER**.
3. Containers must be **CLOSED** except when adding waste. Chemical waste containers must also be:
 - In good condition
 - Have a properly fitting cap.
 - Be compatible with the waste.
4. **LABEL** the container **IMMEDIATELY**. Fill out the label completely. **DO NOT ABBREVIATE CHEMICAL NAMES!**
5. Check off the hazard category.
6. USE **SECONDARY CONTAINMENT** for containers of liquids.
 - Store incompatible chemicals (including wastes) separately.
 - Waste containers may be kept on the bench top while they are in use.
 - If a container is full or not in use, place it in the Lab Waste Accumulation Area.
 - You can accumulate many small, compatible containers (tubes, vials) in a zipper-type plastic bag, and put the waste label on the bag.

How to Request a Waste Pick-up

Fill out a Lab Waste Pick-up Form.

Forms at http://www.bc.edu/offices/facilities/meta-elements/pdf/waste_pick_up.pdf).

Drop the form off in the “Hazardous Waste Pick-up” file holder

- MERKERT - outside Merkert 125
- HIGGINS – BIOLOGY OFFICE in the designated folder on the Biology Secretary’s desk

Sink Disposal and Water Use

Massachusetts Water Resource Authority (MWRA) regulates our sink disposal and lab water use. The **ban on sink disposal** includes:

- ALL flammables.
- All hazardous waste.
- Oils, grease and waxes.
- Colored solutions that are either concentrated, intense or persistent (concentrated stain solutions, fluorescent dyes).
- **pH:** The pH neutralization systems in Merkert and Higgins are designed to buffer disposal of incidental quantities of acids and bases so that we stay within MWRA’s pH discharge limits: 5.5<pH<12.0. DO NOT use the sinks to discard unwanted corrosive chemicals.
- **Halogenated organic solvents** (e.g. methylene chloride, chloroform): We are banned from sink disposal of any amount of halogenated organic solvents, including the aqueous layer from separatory funnel extractions. Collect all potentially contaminated material as hazardous waste.
- **Water Use:** MWRA expects us to conserve water as much as possible.
 - Avoid any set-up that requires once-through cooling water. Use water circulators or the building’s closed water loop.
 - Do not create a vacuum with water aspirators.

How to Manage Sharps and Biomedical Waste

Sharps

- Place all sharps in the hard-sided red plastic sharps containers or double walled cardboard boxes.
- If sharps are potentially infectious, disinfect for 20 minutes in a solution of 10% household bleach in water, then drain. Alternatively, autoclave infectious sharps.
- In Merkert, sharps containers are collected outside M016.
- In Higgins, notify John O'Grady if you need a sharps pick-up.

Biologically contaminated material (non-sharps)

Sterilize/disinfect contaminated materials before disposal. Use clear autoclave bags INSIDE red bags. The autoclaved clear bags can be tossed in the trash.

Pathological waste (animals, animal parts):

Follow the procedures established in your lab, or contact the Animal Care Facility to find out the procedure for disposal.

Glass and Plastics

You can reduce lab waste by reusing materials in the lab, and by minimizing your use of non-recyclable material

- Broken and fragile glass destined for the trash should be placed in **broken glass boxes** found in each lab.
- **Rinse all empty containers**, deface the original label, and write the word "RINSED" on them. Use the container for waste, or discard in trash.
- **If a container held METHYLENE CHLORIDE, other HALOGENATED SOLVENTS, or acutely hazardous (P-list) chemicals:** You must triple rinse the container AND collect all rinses for disposal as a hazardous waste.

Hazardous Wastes – Characteristics or Listed

- **Flammable** - flash point <140°F.
- **Corrosive** - pH<2 or pH>12.5.
- **Reactive** - reacts violently to water or air, may be inherently unstable, or generate toxic fumes when exposed to air or water. **See list of peroxide formers on other side.**
- **Toxic** (Listed by EPA)
These are wastes that are toxic to humans if ingested.
include:

Arsenics	Dichloroethane
Barium	Lead
Benzene	Mercury
Cadmium	Methyl ethyl ketone
Carbon tetrachloride	Nitrobenzene
Chlorobenzene	Pyridine
Chloroform	Selenium
Chromium	Silver
Cresol	Trichloroethylene
- **Acutely Hazardous** (Listed by EPA [P-list])
These wastes are designated in a special category by EPA because of their toxicity. Examples: cyanides, osmium tetroxide, allyl alcohol, carbon disulfide, sodium azide. Acutely hazardous waste applies to the pure form of a chemical (discarded product or pure solution) or spill clean-up debris.

If your lab generates more than 1 Liter or 1 Kg of acutely hazardous waste you must date the container and request a pick-up immediately.

FOR MORE INFORMATION, SEE THE BC CHEMICAL HYGIENE AND ENVIRONMENTAL MANAGEMENT PLAN, (<http://www.bc.edu/offices/facilities/ehs/library/programs.html>) OR CONTACT Eric Johnson 617-552-0363 eric.johnson.5@bc.edu; or Gail Hall, 617-552-0300, gail.hall@bc.edu