

Hazardous waste management

This document is designed to quickly inform supervisors of research and teaching labs of the appropriate method to label, sort, store and dispose of your hazardous waste.

For more specific instructions on hazardous waste management, you can consult the following documents and link written by the Office of Risk Management:

- **Lab Safety Manual:** <https://orm.uottawa.ca/sites/orm.uottawa.ca/files/laboratory-safety-manual.pdf>
- **Hazardous waste services:** https://orm.uottawa.ca/sites/orm.uottawa.ca/files/hazardous_waste_and_other_services_-_version_1.0_final_draft.pdf
- **Hazardous waste directive:** https://orm.uottawa.ca/sites/orm.uottawa.ca/files/hazardous_materials_and_hazardous_waste_directive_5.1_eng.pdf
- **UOttawa Hazardous Material Technical Services Webpage:** <https://orm.uottawa.ca/environmental-management/hazardous-materials-technical-services>

Labelling

Almost every laboratory activity generates some type of waste that cannot be safely disposed in regular waste streams. As a result, the University offers a hazardous waste collection services to all research lab. Nonetheless, no product can be offered for disposal or delivered to a hazardous waste room unless the hazardous waste is in a suitable waste (or other) container and labelled with, at a minimum, the following information:

- Contents of the container (name, chemical formula, etc.)
- Date hazardous waste was first added to the container
- Building and room number where the waste was generated
- Contact information for owner or user
- Any other special handling information for the waste

Having this information on the container enables uOttawa to properly classify and safely dispose of the hazardous waste material in a safe and environmentally responsible manner. Applying a label as soon as you start filling the container also prevents others to mix incompatible waste together (for instance, bases and acids). Use the waste labels designed for this purpose (available by filling the “Supply and Equipment” section of the **Hazardous Materials Technical Services Regular Collection Request**). A blank hazardous waste label is shown below.

DÉCHET DANGEREUX / HAZARDOUS WASTE

Université d'Ottawa
University of Ottawa

PROFESSEUR(E) / PROFESSOR : _____

ÉDIFICE / BUILDING : _____

PIÈCE # / ROOM # : _____ TÉLÉTEL : _____

PERSONNE RESSOURCE /
CONTACT PERSON : _____

DATE : _____

CONTENU / CONTENTS : _____

INFORMATION SPÉCIALE /
SPECIAL INFORMATION : _____

EN CAS D'URGENCE, COMPOSEZ : 5411
IN CASE OF EMERGENCY CALL : 5411

DÉCHET DANGEREUX / HAZARDOUS WASTE

FIGURE 1: A HAZARDOUS WASTE LABEL

Sorting

Incompatible, highly reactive and highly toxic wastes must always be packaged and stored separately. Even if only in residual amounts on solid waste materials. This is done to minimize fire and explosion hazards and to ensure proper handling procedures by the Environmental, Health and Safety at the Faculty of Science can provide the necessary advice and assistance regarding the sorting and storage of hazardous waste in your laboratory. Waste should be separated as follows:

- Separate liquid and solid waste.
- Separate liquid organic waste from liquid aqueous waste (with various chemical products).
- Separate strong acids and bases from other aqueous waste.
- Separate flammable, acid, base and oxidizer wastes.

Please note that there are certain types of waste that are special cases that may have additional requirements or restrictions such as declassified radioactive waste, explosive or highly unstable waste or when you want to dispose of a large number of chemicals. You will need to fill a special hazardous waste form to dispose that kind of waste.

Storage

Often laboratories will leave certain waste container open because they produce a lot of waste. It is important that waste container that are left open more than a couple of minutes are in a well-ventilated area such as a fumehood.

Waste containers should be clearly labelled and kept closed at all times, except when contents are being added. Do not leave filter funnels in the open necks of containers, even if the waste is in a fume hood. Fume hoods are not to be treated as a method of waste containment or disposal.

20 Litre closed head carboys containers are available for hazardous liquid waste storage (Inorganic and Organic). These containers have a maximum life of two (2) years. If today's date is greater than the date on the container do not use the container; inform the Environmental Health and Safety Technician and obtain a new container. Do not fill liquid containers above 80% of their total volume. This allows for safe handling, safe liquid transfer and is easier to lift and transport. All 20 litre closed head carboys containers are to be placed inside secondary containment to prevent spillage.

Container

All materials must be collected in a suitable waste storage container. The Office of Risk Management provides compatible containers to laboratories needing to dispose of hazardous waste. To request hazardous waste containers, please fill out the "supply and equipment order" section of the Regular Hazardous Waste Collection Request Form. Please note the following about container orders:

Note: These containers are to be used solely for hazardous waste; if the containers are not used for hazardous waste the faculty will be charged for the cost of the container(s).

TYPE OF WASTE	DESCRIPTION	CONTAINER	DISPOSAL
Liquid waste	Liquid hazardous waste originating from laboratory process involving chemical Examples: <i>Organic solvent, uncontaminated PBS, acids, bases, expired chemicals</i>	<ul style="list-style-type: none"> • 20 L white carboy for liquid waste • 10 L white carboy for liquid waste • 4L Amber or Plastic bottle • Original container • 205 L Liquid waste drum 	Fill a regular Hazardous waste collection form
Solid waste	Solids that are contaminated by hazardous substances Example: <i>Contaminated tips, Contaminated absorbent material</i>	<ul style="list-style-type: none"> • 20 L Black Pail for solid waste • 5L white pail for solid waste • 205 L solid waste drum 	Fill a regular Hazardous waste collection form
Biohazard sharps	Waste that is sharp and could cause puncture or laceration of skin that has been in contact with an infectious agent Example : <i>needles, blades</i>	<ul style="list-style-type: none"> • 4.5L Sharp container • 23L Bio sharps container 	Fill a regular Hazardous waste collection form
Glass waste	Glass waste that is not contaminated with chemicals	<ul style="list-style-type: none"> • Cardboard box with plastic liner 	Call 2222 to request your waste be picked up or to order more glass waste boxes with liner
Liquid biohazard waste	Liquid that is contaminated by infectious material Example: <i>Growth media, LB, PBS used for cell culture</i>	<ul style="list-style-type: none"> • Original container • Lab container 	<p>Sterilize your liquid waste by adjusting your waste to 10% bleach or by sending it to the autoclave if safe to do so</p> <p>Transfer your sterile solution to a chemical waste container. Wash your lab container</p>

Solid biohazard waste	Solid that is contaminated by infection material <u>Example:</u> <i>Plastics used for cell culture, petri dishes</i>	<ul style="list-style-type: none"> Red autoclave bag Cardboard box with double liner for BIO waste 	Send your bag to the autoclave facility where it will be sterilized and disposed.
Expired chemical	Chemicals that are no longer useful for your laboratory <u>Example:</u> <i>Peroxide former approaching it's end date</i>	<ul style="list-style-type: none"> Original container 	Fill a regular Hazardous waste collection form

Disposal

Most hazardous waste can be disposed by completing a “Regular Collection Request” Form ([Link: http://orm.uottawa.ca/content/hazardous-materials-technical-servicesregular-collection-request](http://orm.uottawa.ca/content/hazardous-materials-technical-servicesregular-collection-request)) to have hazardous waste collected directly from your facility. Chemical waste collection request forms must be received no later than 10:00 a.m. on the previous day of the scheduled collection day.

For regular hazardous waste services, the [schedule](#) is organized by Faculty and each faculty has a dedicated weekday and time frame for door-to-door collections. The schedule is subject to variations and updates as deemed necessary by the Environmental Risk Management Specialist of the Office of Risk Management.

If you require an “ad hoc” or a “special” collection that cannot be scheduled within regularly scheduled collection (e.g. laboratory decommissioning), users and University personnel must submit a “Special Request / Ad Hoc Event” collection request Form available at <https://orm.uottawa.ca/hazardousspecial-request>. A representative of the environmental management team will contact you with a scheduled date and time. These services are performed outside of the regular schedule. Therefore, we strongly suggest planning your waste collection ahead of time as we cannot guarantee service in the same week. Some examples of specialty hazardous waste are empty compressed gas cylinders, damaged containers, laboratory clean-up, a potentially high-risk material, unknown materials, used hazardous spill bags, contaminated soil and water, etc.

Radioactive and Biological Waste

For radioactive and biological waste disposal, call the appropriate specialist within the Radiation and Biosafety group at ORM. ORM’s Environmental Health and Safety Technician and the hazardous waste contractor will not be picking-up this waste. Please contact the relevant following resources to arrange for disposal:

- Radiation Compliance Specialist: rad.safety@uottawa.ca
- Biosafety Compliance Specialist: bio.safety@uottawa.ca

Un-identified hazardous waste

For safety reasons, the University’s Environmental Health and Safety Technician and the hazardous waste disposal contractor will not accept “unidentified” or “unknowns” containers of any kind, at any

time. Every effort has to be made by users and generators to properly identify all waste before submitting for disposal. If identification of the "unknown" cannot be made, then a characterization of the waste (based on physical and chemical properties) is required prior to acceptance of the material by the disposal contractor.

Empty containers disposal

Empty containers that held hazardous materials or hazardous waste must be triple rinsed with water or a suitable solvent and air-dried before disposal to ensure that it is free of liquid or other visible chemical residue. If a solvent is used for rinsing the emptied container, it must be air-dried in a fume hood or a ventilated area.

Clean, empty, rinsed containers can be delivered to the hazardous waste storage room during open door periods or collected during hazardous waste regular collection events when the request has been identified on the waste collection form.

All the rinse/washing water generated from containers used for products identified in section 5.4.4.5- 1), 2) and 3) of the [uOttawa hazardous materials and hazardous waste guidelines](#) must be collected and disposed of as hazardous waste with proper labelling and packaging. To reduce production and disposal of rinse/washing water for volatile organic solvents (e.g. acetone, ethanol, ethyl acetate, ethyl ether, hexane, methanol, methylene chloride, petroleum ether, toluene, xylene, etc.), the emptied containers can be air-dried in a fume hood or ventilated area without triple rinsing. As long as they are not listed in Schedule 2 Part A or Part B of Ontario Regulation 347 (Acute Hazardous Waste Chemical or Hazardous Waste Chemical).

Upon reception of the chemicals by the Science Store, every container is entered into the University's inventory (Vertere) and identified with a dedicated barcode. The Environmental Health and Safety Technician and hazardous waste disposal contractor have access to a barcode reader to keep the inventory updated upon disposal. It is important that, if containers are disposed using general housekeeping, users make sure to take every bar code off from all empty containers and submit them during waste collection event.