



Laboratory Waste Disposal

1. Purpose

This guideline details the procedures to follow in disposing of hazardous waste that is generated in the laboratory in order to minimise risks associated with the disposal of laboratory waste.

2. Scope

This procedure applies to all laboratory personnel within the School of Chemistry who generate and must dispose of hazardous waste.

3. References

Working with contaminated Hazardous Waste index

<http://staff.uow.edu.au/ohs/workingsafely/hazardouswaste/>

A step-by-step guide to contaminated Waste Disposal Guidelines

<http://staff.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017033.pdf>

Contaminated Waste Disposal Guidelines

<http://staff.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017032.pdf>

School Hazardous waste Representatives

<http://staff.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017031.pdf>

Working with Sharps Guidelines

<http://staff.uow.edu.au/ohs/workingsafely/syringedisposal/index.html>

4. Definitions

Biological Waste - Biological materials of animal, human, plant or microbial origin.

Biohazardous waste – This can include infectious material, contaminated agar plates, live cultures, human cells and blood, and disposables that have been in contact with the above.

Broken Glass bin – These are the yellow bins located within certain labs. The contents of these bins are placed into the domestic waste stream, so should not contain any hazardous material.

Contaminated Materials Lab Bin – Bins located in labs for glass, filter paper, tissues, gloves which are not free of hazardous material.

Contaminated Materials waste contractors Bin - These are located outside lab 18.207, in the Chemical Store unpacking room 18.G11 and 41.340 and provide to empty lab contaminated waste bins.

Cytotoxic Waste – Any substance contaminated with any residue or preparations that contain materials that are toxic to cells principally on their action on cell reproduction. Staff preparing cytotoxic drugs for experimental purposes are at risk of dermatitis, allergic reactions, cytogenic abnormalities, carcinomas, mutagenic effects to cells, etc.

Domestic glass - Glass not in use in the laboratory such as coffee jars, glass drink bottles.

Laboratory glass – Glassware specifically designed or used for laboratory work.

Hazardous waste container, liquid – 5L HDPE available from dry store

Hazardous waste container, sample vials – 20L drums are available from School OHS co-ordinator to place sample vials which contain less than 2g of material.

Sharps – Objects or devices that have acute, rigid corners, edges, points or protuberances capable of cutting or penetrating the skin e.g. hypodermic needles, glass, scalpel blades and lancets. All sharps are hazardous because of the potential to cause cuts and punctures. Sharps may also be contaminated with toxic, infectious or radioactive materials, which substantially increase the risk potential.

Winchester – Brown glass container, most often 2.5 L in volume, used to store solvents, ammonia solution and concentrated acids.

5. Procedure



5.1. General Considerations

- All generators of potentially hazardous wastes must ensure segregation, accurate and complete labelling and safe storage, transport, treatment and disposal of such wastes.
- Wastes should be minimised where possible. Waste chemicals and solvents are stored in suitable areas whilst awaiting collection and must not be accumulated. Regular disposal from the laboratories must be part of the laboratory OHS program.
- Wastes should be segregated and mixing avoided where possible, as unexpected reactions may occur. See UOW Chem Factsheet : [Chemical Compatibility](#)
- If you are generating a large amount of one particular type of waste, have a separate residue container for it.
- Ensure the container is not leaking and there is no spillage on the exterior of the container.
- Untrained staff and students are not to handle hazardous wastes and must not be given responsibility for them. Personal Protective Equipment should be a consideration when handling chemical waste. Reference should be made to the Material Safety Data Sheet.
- Special collections can be made from the laboratory at the cost of the unit and/or research group. Advice can be obtained from the School Hazard Waste Contact (Sandra Chapman) or the University OHS unit.











5.2. Laboratory Procedures

All potential waste streams that arise as part of laboratory operations needs to be assessed and an appropriate disposal route selected prior to it actually being generated. Waste should be collected in a suitable container and labelled accordingly. Table provides a summary of container and label types.

Table 1: Laboratory waste containers and labels

Waste Type	Waste Container	Sourced From / Located in	
Hazardous Materials			
Chemical solvents and liquids	5L HDPE residue container (approved)	<ul style="list-style-type: none"> • Containers and labels from Dry Store Ground floor Bldg 18.G10 • Contact Roger Kanitz (x3232 or 5943) for more containers and Sandra Chapman (x3473) for labels. 	
Contaminated Material which has hazardous material adhered Filter paper Gloves Tissues Glass	Laboratory Contaminated Material bin Waste Contractor Contaminated Waste bin	Each laboratory where relevant Outside lab 207, Chem Store G11 , 41.340	

Guidelines for Laboratory Waste Disposal

Waste Type	Waste Container	Sourced From / Located in	
Sample vials containing less than 2g hazardous material	Hazardous sample vial waste container	<ul style="list-style-type: none"> Source: School OHS co-ordinator 	
Old or unlabelled chemicals in supplier bottles	These bottles can be taken directly to waste pick up, ensuring that a waste tracking log is completed. Special collections of high risk or unlabelled material can be arranged.	<ul style="list-style-type: none"> See School OHS co-ordinator 	
Glass			
Broken Glass (chemically clean, including domestic glass)	Half-size yellow or grey SULO bins Small bin with lid, temporary storage	18.111 18.209 18.220 41.340 41.342 41.343 On laboratory bench	
Winchesters 	Winchester recycling bin If contained acid – rinse with water before disposal If contained solvent – vent in fume-hood before disposal Dispose of lids in normal bin	Two bins located near Bldg18 back dock	
Solid			
Spent Silica	5L HDPE residue container (approved) or bagged in Contaminated waste bag	Dry Store Ground floor Bldg 18.G10	
Sharps Contaminated Sharps	Yellow sharps containers In a sharps container and bagged according to the type of contamination (biohazardous, radioactive, cytotoxic)	In laboratory, as needed	
Other types of Waste			
Biohazardous	Yellow bags or containers labelled with black biohazard symbol.	In laboratory when relevant. <ul style="list-style-type: none">Source: school OHS Co-ordinator	
Radioactive	Red bags or container labelled with radioactive symbol.	In laboratory when relevant. <ul style="list-style-type: none">Source: school OHS Co-ordinator	
Cytotoxic 	Purple bag or container labelled with white cytotoxic symbol.	In laboratory when relevant. Source: school OHS Co-ordinator	

5.3. Issues with Particular Waste Types

5.3.1. Chemical Waste

- **Class 1 (Explosive)** and **Class 4 (Spontaneously Combustible)** wastes cannot be disposed of by the routes mentioned below. See the School OHS Facilitator for advice.
- **Halogenated solvent wastes** are to be collected in waste containers, labelled as halogenated solvents. Halogenated wastes must be kept separate to other organic solvents as, for example, mixtures of acetone and chloroform can explode.
- **Cyanide** wastes must be placed in an appropriate waste bottle and the solution kept alkaline at all times
- **Dry chemicals** should be placed in a drum (not more than 5L), labelled "Waste Chemicals for Disposal". Strong oxidising and reducing agents (chlorates, bromates, peroxides, nitrates, iodides, metal dusts, hypochlorites, etc.) should not be placed in this drum. See your supervisor for instructions on the disposal of these reactive dry chemicals. They should never be placed with organic chemicals.
- **Highly reactive substances** such as amines, phosphorus compounds, acetic anhydride, acetyl- chloride should never be placed in general disposal containers.
- Dilute, non-toxic chemicals may be washed into the sewerage system if approved by Sydney Water. At this stage the University has the policy of no chemical discharge down the drains. All enquires concerning wastes discharged through the Sewerage System must be directed to the Buildings and Grounds Department.
- Large quantities of any chemical should be returned to the store for recovery or disposal. See your supervisor for specific instructions and notify Sandra Chapman x3473.
- **Not down the drain!** Volatile solvents and smelly substances can enter the drains via rotary evaporators, vacuum filtration or from carelessness. Have you ever had a smell arising from the drain in your lab? Please think about what is going down your drain - especially drains in fume-hoods as you maybe unaware of the smell that is escaping. Everyone should make sure that traps are used and refilled regularly to prevent hazardous materials entering the drains and waterways.

5.3.2. Glass Disposal

- Winchesters and **unbroken** domestic glassware should not be placed into the normal lab bins.
- Empty (clean and dry) Winchesters should be taken to the Winchester recycling bin located near the Building 18 back dock. Remove caps and vent Winchesters containing solvents and rinse Winchesters containing strong acids before disposing.
- The yellow SULO waste glass bins are **not for sharps disposal** (syringe needles, scalpel blades etc.) **and not for glassware containing hazardous material** as contents from these bins goes into the domestic waste i.e. landfill. Sharps must be placed into the yellow sharps disposal containers provided.
- Small bins can be used for broken glassware in laboratories that do not have the yellow SULO bin, but these must had a lid and be clearly labelled. When transporting this bin to the large SULO bin, ensure that lid is firmly attached.

5.3.3. Sharps / Biological Hazards/ Cytotoxic waste/ Radioactive Waste

- If sharps are contaminated with biohazardous or cytotoxic material the sharps container should be placed in an appropriately labelled waste disposal bag designed for that particular hazard.
- Segregate biological wastes as non-infectious, infectious and sharps. Wastes containing live microorganisms can be treated by autoclaving or chemical disinfection. For more information please contact Sandra Chapman.

5.4. Waste Disposal Routes

A summary of disposal routes for each type of waste is provided in Table 2.

Table 2: Laboratory waste disposal routes

Waste Type	Time	Location	Documentation
Chemical (Hazardous Substances and/or Dangerous Goods)	Full containers collected fortnightly on the Wednesday of each month between 9 and 11 am - timetable	Solvent store GS6	Complete the Waste Tracking Log book prior to placing in GS6. Retain the yellow copy.
Contaminated Material lab bin	Empty into the waste contractor contaminated material bin	Outside lab 207 Chemstore G11 41.340	
Contaminated Material waste contractor bin	When waste contractor's contaminated materials bin is full contact S. Chapman		Complete the Waste Tracking log. Retain the yellow copy.
Broken Glass (chemically clean, including domestic glass)	Ring Building & Grounds service centre to arrange the emptying of bins.	Extn. 3217	Ask for and note down B&G job request number.
Temporary broken glass storage located in some labs	Empty into SULO glass waste bins regularly	-	-
Sharps Infected Sharps	Full containers collected on the 1 st and 3 rd Wednesday of each month between 9 and 11 am When container full contact S. Chapman	Solvent store GS6 -	Complete the Waste Tracking Log book prior to placing in GS6. Retain the yellow copy. -
Biohazardous	When container full contact S. Chapman	-	-
Radioactive	Place full container in radioactive waste store.	41.G53 Contact S.Chapman to obtain key.	Complete the Waste Tracking Logbook located in radioactive store.
Cytotoxic	When container full contact S. Chapman	-	-

6. Reference Personnel

All changes to this document shall be referred to the School Safety Committee prior to implementation.

7. Documentation

Waste Tracking Log	Managed by OH&S unit
Yellow copy of the waste tracking log	Archived by the research group
University Waste labels	Available from School OHS Co-ordinator