



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

UOW SAFE@WORK

LABORATORY WASTE DISPOSAL GUIDELINES

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1 Introduction

These laboratory advisory guidelines provide procedural information for laboratory workers to follow when disposing of waste generated in laboratories across the University. The guidelines should be read in conjunction with the [UOW Hazardous Waste Disposal Guidelines](#) in order to minimise risks associated with the disposal of laboratory waste.

2 Scope

These guidelines apply to all workers, students and visitors who work within a laboratory environment at the Wollongong Campus and Innovation Campus that generate and/or dispose of any type of waste. Local waste management arrangements are in place at satellite campuses.

3 General Principles

All potential waste streams that arise from laboratory operations needs to be assessed and an appropriate disposal route selected prior to waste being generated. Waste should be collected in a suitable container and labelled. See Appendix 1 – Summary of Hazardous Waste Streams.

Main points for consideration are:

- **minimise** waste and do not accumulate large amounts in the laboratory. Regular disposal from the laboratories must be part of the laboratory WHS program.
- **segregate** waste - have a separate residue container if you are generating a large amount of any particular type of waste. Ensure the waste container is compatible with the waste you are collecting.
- **label** the waste residue container with the [appropriate waste label](#).
- **store** waste in a suitable area prior to collection. For example, chemicals and solvents should be stored in ventilated areas and residue container lids must be secure. Ensure container is not leaking and no spillage on the exterior of the container. Primary container should be placed in a suitable bund.
- **handle** waste only if you are aware of the hazards associated with the waste and appropriate risk controls are used.
- **dispose** waste as per relevant UOW guidelines.
- **record** all disposal on [Waste Tracking Log](#) to ensure evidence of correct waste management.

3.1 Co-Mingled (Mixed) Hazardous Waste

Waste that contains multiple hazards is classified as “co-mingled”. Co-mingled hazardous waste should be disposed in a manner that best addresses ALL hazards. Do not attempt to dispose of co-mingled hazardous waste before contacting your local [Hazardous Waste Contact](#), Facilities Management Division (FMD) or the WHS Unit.



Segregation of the same type of waste contaminated with different hazards may be necessary eg contaminated sharps into separate, labelled containers to segregate chemical and biological contamination.



Never mix incompatible waste in the one bin or bag.

4 Hazardous Waste Streams

4.1 Chemically Contaminated Waste

Bin colour: yellow base with orange lid

Final disposal method: incineration

Filter paper, gloves, tissues, paper towel, benchcote, spent silica, and sample vials that have been contaminated with hazardous chemicals should be placed directly into a chemically contaminated waste bin or bag.



4.1.1 Special Exceptions for Chemically Contaminated Waste

Always refer to the Safety Data Sheet (SDS) to determine chemical compatibility and recommended waste disposal procedures. Certain chemicals require specific disposal procedures.

- Class 1 (Explosive), Class 4.2 (Spontaneously Combustible) and Class 4.3 (Dangerous When Wet) waste cannot be disposed by regular methods.
- Halogenated solvent waste is collected in waste containers, and clearly labelled as halogenated solvent. Halogenated waste must be kept separate to other organic solvents as mixtures can react or even explode (mixtures of acetone and chloroform).
- Cyanide waste must be placed in an appropriate waste container and the solution kept alkaline at all times.
- Highly reactive substances such as amines, phosphorus compounds, acetic anhydride, acetyl chloride and reactive metals should never be placed in general disposal containers with other waste.
- Gels contaminated with ethidium bromide or similar products must be treated as Cytotoxic Waste.
- Most scheduled poisons are disposed as outlined in the [Hazardous Waste Disposal Guidelines](#). Schedule 4, 8 and 9 drugs are disposed as per the [Scheduled Drugs and Poisons Guidelines](#).
- For disposal of hydrofluoric acid waste, refer to [Hydrofluoric Acid Management Guidelines](#).

For further information contact your local [Hazardous Waste Contact](#), FMD or the WHS Unit.

4.2 Waste Chemicals

Waste chemicals can take various forms including solvents, aqueous solutions, dry powders, and unwanted old chemicals. The SDS for each chemical must be checked to ensure compatibility of materials for mixed chemical residue containers. Where possible, mixing of chemicals should be avoided to prevent unexpected reactions from occurring. A bulging waste container must be dealt with immediately by contacting Security on Ext 4900.

The waste container should be compatible with the residue material placed within. If the waste is a liquid, residue containers are approved strong, plastic sealable containers. Only containers up to 5 litres can be accepted by the Waste Store. Containers up to 20L can be collected from their location - a [Waste Tracking Log](#) is to be taken to the Waste Store in place of the container.



No hazardous chemical substances should be disposed down drains. All enquiries concerning wastes discharged through the sewerage system must be directed to FMD.

Generally chemical waste should be segregated according to its properties, such as:

- aqueous acidic
- aqueous alkaline
- halogenated
- non-halogenated
- general hazardous waste – powders etc.
- toxic
- cytotoxic

[Hazardous Waste labels](#) are available for each of these generic categories on the [Waste Disposal web page](#). Affix completed [Hazardous Waste labels](#) to the hazardous waste residue container. If a chemical reagent bottle has lost its label and the identity of the substance is unknown, label with “Caution unknown substance - Do not use”. These bottles can be taken directly to Waste Store for pick up. A cost to the unit and/or research group may be applicable for determining the contents to allow for disposal.

- hazardous waste is collected at the Waste Store (western side of Building 15) every second Wednesday from 9.00am - 11.00am. Store opening dates listed on [Waste Disposal web page](#).
- a [Waste Tracking Log](#) is required when leaving waste at the Waste Store. It is advisable for each laboratory to keep a copy of the [Waste Tracking Log](#).

Special collections can be made from the laboratory at a cost to the unit and/or research group. Advice can be obtained from your [Hazardous Waste Management Contact](#), FMD or the WHS Unit.

4.3 Cytotoxic Waste

Bin colour: purple base with purple lid

Final disposal method: incineration



Cytotoxic waste is any substance contaminated with any residue or preparations that contain materials that are toxic to cells principally by their action on cell reproduction. All cytotoxic waste (class 6.1) should be placed in an approved purple cytotoxic bag or container. When the residue container is full, place in purple labelled cytotoxic waste wheelie bin kept in secure area.



Although the final disposal method for cytotoxic waste is the same as chemically contaminated waste, it must be treated more securely prior to incineration due its mutagenic potential.

4.3.1 Ethidium Bromide

Ethidium bromide can expose users to hazards such as toxic, mutagenic, carcinogenic, and other secondary hazards dependent on its use. The decision to use products such as ethidium bromide should be assessed early as substitutes such as GelRed may provide a similar outcome with much lower hazards, and final disposal should be considered at this early assessment stage.

Liquid Waste eg buffer solutions, stock solutions, etc

- keep record of amount of EtBr in solution
- place in spill proof container with bunding or secondary containment
- apply [Cytotoxic Waste Disposal Identification Label](#) (and label for any secondary hazards)
- dispose via Hazardous Waste Store

Solid Waste eg gels, powder, contaminated consumables (eg gloves, paper, used tea bags, etc)

- place waste in laboratory bin lined with purple cytotoxic bag
- if deemed necessary, first put waste in sealed bag/container to avoid unnecessary exposure or contact
- when bin/bag is full, place in larger secure purple base/purple lid cytotoxic bin which is in a secure location.

4.4 Biological/Clinical, GMO and Biosecurity Waste

Bin colour: yellow base with yellow lid

Final disposal method: autoclave then landfill

Biological/clinical and GMO waste must be rendered non-viable before disposal. This generally means autoclaving. Where applicable, any biosecurity waste must be effectively contained and disposed in a manner approved by the Department of Agriculture and Water Resources.



Waste that has been chemically treated must NOT be autoclaved.

Please see the [Biosafety Manual](#) for further information.



4.5 Sharps Waste

Bin colour: yellow (general) or purple (cytotoxic) approved sharps container

Final disposal method: dependent upon primary contamination

Sharps are objects or devices that have acute, rigid corners, edges, points or protuberances capable of cutting or penetrating the skin e.g. hypodermic needles, broken glass, scalpel blades, lancets, syringes with needles, razor-blades.

Place any sharps in approved sharps container. Sharps containers should be located adjacent to the work area where sharps are used for easy access.

Sharps may also be contaminated with toxic, infectious or radioactive materials. These sharps should be placed into separate sharps containers which are then labelled appropriately according to the type of primary contamination ([chemically contaminated](#), [biohazardous](#), [radioactive](#), and [cytotoxic](#)).

When the sharps residue container is filled to the “fill line”, seal container, affix [Hazardous Waste label](#) (if required), and place in appropriate wheeled bin.

For further information, see the [Working with Sharps Guidelines](#).



Do not overfill container - only fill to “fill line” marked on container.



4.6 Glass Waste

Bin colour: *green base with brown lid (brown glass eg Winchester)*
green base with white lid (clear glass)

Final disposal method: *recycling*

Glass, whether broken or unbroken, should not be placed in general waste bins. The bottle cap can be removed and disposed in the general waste bin.

Once clean, place glass in waste bin based on glass colour.

When the laboratory glass bin is $\frac{3}{4}$ full, the lid should be placed on the bin and the contents transferred to the larger solid waste bins. Contact FMD on ext 3217 to replace this larger bin when it is approximately $\frac{3}{4}$ full.



4.6.1 Broken Glass

Broken glass should be treated as Sharps waste.

If pieces of broken glass are too large for a sharps container, they should be placed into an impervious container with a secure lid, and then placed in appropriate wheelie bin.

4.6.2 Contaminated Glass

Any glass that has been contaminated, and unable to be safely decontaminated, should be treated as other waste of the same hazard eg Chemically Contaminated Waste Biological/Clinical, GMO and Biosecurity Waste, cytotoxic.

Contaminated glass containers or laboratory glass such as beakers, volumetric flasks or other Pyrex items cannot be placed in general recycling bins.

4.7 Radioactive Contaminated Waste

Bin colour: *red base with red lid*

Final disposal method: *dependent on primary hazard*

Radioactive waste should be packaged according to its primary hazard eg Chemically Contaminated Waste or Biological/Clinical, GMO and Biosecurity Waste. It will be kept in the Radioactive Waste Store to “delay and decay” prior to final disposal as non-radioactive waste.

Please see [Radioactive Waste Disposal Guidelines](#) for further information.



4.8 Compressed Gas

When a compressed gas cylinder is empty, contact the manufacturer/supplier for return.

Empty aerosol cans can be disposed in the recycling bin. Full or partially used cans can be taken to the Waste Store where they will be placed in a segregated bucket until collection.

5 Program Evaluation

In order to ensure that these guidelines continue to be effective and applicable to the University, the program will be reviewed regularly by the WHS Unit and relevant stakeholders. Conditions which might warrant a review of the guidelines on a more frequent basis would include:

- an injury or near miss resulting from laboratory waste disposal

- incidents related to laboratory waste disposal
- changes to legislation and associated standards
- worker or workplace concern.

Following completion of any review, the program will be revised and, if necessary, updated in order to correct any deficiencies.

6 Related Documents

- [Biosafety Manual](#)
- [Hazardous Waste Disposal Flowchart](#)
- [Hazardous Waste Disposal Guidelines](#)
- [Hazardous Waste Management Contact List](#)
- [Radioactive Waste Disposal Guidelines](#)
- [Working with Sharps Guidelines](#)
- Laboratory Waste Disposal – IHMRI SOP

7 Referenced Documents

- AS 2243.3-2010: Safety in laboratories - Microbiological safety and containment
- AS 3816-1998: Management of clinical and related wastes
- AS 4031-1992: Non-reusable containers for the collection of sharp medical items used in health care areas
- AS 4261-1994: Reusable containers for the collection of sharp items used in human and animal medical applications
- AS 4478-1997: Guide to the reprocessing of reusable containers for the collection of sharp items used in human and animal clinical/medical applications
- Biohazard Waste Industry Australia and New Zealand Industry Code of Practices 6th Edition 2010

8 Version Control Table

Version Control	Date Released	Approved By	Amendment
1	November 2012	Manager WHS	New document
2	December 2012	Manager WHS	Minor amendment
3	June 2013	Manager WHS	Repairing links
4	October 2018	Manager WHS	Major review of information and document format.

Appendix 1 – Summary of Hazardous Waste Streams

