Ollscoil na Gaillimhe
University of Galway

Polasaí agus Nósanna Imeachta/Policies and Procedures

Code	QA195
Title	Hazardous Waste Management Policy
Policy Owner	Chief Operating Officer
Date	October 2026
Approved By	University Management Team

1. Purpose

This Policy sets out the principles to be followed by all University Units/Schools and staff who generate hazardous waste during their teaching, research or other university activities. Waste is classified as being hazardous when it displays one or more of the hazardous properties listed in Annex III of Commission Regulation (EU) No. 1357/2014 i.e., is explosive, oxidising, flammable, irritant, toxic to a specific organ, an acute toxin, carcinogenic, corrosive, infectious, toxic for reproduction, mutagenic, releases a toxic gas, a sensitiser or eco-toxin. Based on this Policy, all Units/Schools need to develop their own Waste SOPs for (see 3.0 Related Documents) the safe management and disposal of their hazardous waste streams.

2. Description

This Policy applies to all Units of the University generating hazardous waste. These are all hereinafter collectively referred to as the 'University'. Under Health and Safety legislation, and Environmental legislation the University and its staff have a duty to ensure the safe management of all hazardous waste and the proper disposal of this waste by licenced contractors. This is a further requirement under the University principles of sustainability.

3. Principles to be complied with

No hazardous waste (see examples in Table 1, Table 2 and

Table 3) will be discarded down University sinks/drains.

If staff/students are unsure of how to deal with hazardous (or potentially hazardous) waste, they should contact their PI/Manager and Technical staff in their Unit for direct advice.

Hazardous waste cannot be held on site for more than 6 months. Earlier collections must be organised for hazardous waste or where a large volume requires disposal.

Ensure that all waste is correctly labelled (Appendix 1).

A current inventory of waste must be maintained (as per QA 109 Chemical Agents Inventories).

Documentation regarding waste and its transportation shall be kept for at least three years.

Segregate all hazardous waste based on compatibility.

Never mix incompatible wastes.

Never overfill waste containers - at least 20% headspace required.

Units must have SOPs in place for Waste management.

Waste containers must be UN approved.

Do NOT use glass containers for waste, unless specifically required due to the chemical Agent properties.

Plastic Waste containers must be used within 12 months of purchase (before they degrade).

Waste containers should be of an appropriate size to reduce manual handling hazards.

Minimise the volume of hazardous waste being generated by considering the full life cycle of the chemical or biological process. See for example the Disposal section of the Basic Principles For the Safe Use of Chemicals.

Dispose of waste as identified in the Activity/Chemical/Waste risk assessment and Unit SOP (and not longer than 6 months once generated – as stated above). Deferring the disposal will mean that the costs will generally increase as doe the risk. Certain chemicals have the potential to decompose or form explosive compounds and create the risk of an explosion in the facility.

Regular waste collections as identified in the Activity/Chemical/Waste risk assessment and Unit SOP (and not longer than 6 months once generated – as stated above) prevent the build-up of chemical waste on site and enables the flammable stores or other specialist lab space to be better used for clean chemicals or other priorities.

Units need to use the University's lab clear out procedure see Appendix 5,on the completion of projects or retirement of staff, so that all associated hazardous waste is promptly disposed of. Otherwise, there is the potential for chemical or biological samples to lose their labels. In such cases as unknowns the cost of their disposal increases in orders of magnitude higher compared to disposing the equivalent known waste. This process will also lead to better space management and reallocation of resources.

4. Overview of the main waste streams produced in University Laboratories and Processes.

Table 1 Main Chemical Waste Categories to be considered as Hazardous (Non-exhaustive)

Chemical Category	Notes
Non-Chlorinated Organic waste: Solvents such as, Methanol, Acetone, Hexane, Ethyl Acetate, Ethanol, Toluene, Tetrahydrofuran, Cyclohexane.	Wastes are collected in 5L UN approved opaque plastic waste drums in each Laboratory and labelled as Organic Waste (Appendix 1) (larger volumes may require 10L containers -manual handling assessment and equipment need to be in place)
Chlorinated Organic waste: Solvents such as Dichloromethane, Chloroform, Tri chloromethane	Wastes are collected in 5L UN approved opaque plastic waste drums in each Laboratory and labelled as Organic Waste (Appendix 1) (larger volumes may require 10L containers -manual handling assessment and equipment need to be in place)
Inorganic solvent waste: such as liquid ammonia, sulfur dioxide, liquid salts…	Wastes are collected in 5L UN approved opaque plastic waste drums in each Laboratory and labelled as Organic Waste (Appendix 1) (larger volumes may

	require 10L containers - manual handling assessment required, and handling equipment may be necessary).
Aqueous waste such as Ammonium Hydroxide	Wastes are collected in 5L opaque UN approved plastic waste drums in each Laboratory and labelled Aqueous Waste (Appendix 1) (larger volumes may require 10L containers - manual handling assessment required, and handling equipment may be necessary).
Silica gel and Alumina waste Silica gel and Alumina is used in the laboratory for column chromatography it is a very fine white powder.	After the silica/alumina has been used it is collected in its original container usually a 1kg Plastic Container and labelled as waste (Appendix 1). A stock of 3L Plastic containers is also held by stores, which can also be used to collect this waste.
Chemically contaminated solid waste excluding glass (i.e. anything which has come into contact with chemical agents; nitrile gloves, filter paper, etc).	120L plastic or cardboard containers (Licenced waste contractor approved designated container).
Specialist waste To be <u>kept separately</u> such as: Phenol/Chloroform waste contaminated tips, etc. COD vials. Mercury requires specialist disposal and must be stored in a sealed contained (HDPE), locked, well-ventilated location in the interim. Solid waste generated from undergraduate practicals would be assessed as low hazard Solid waste generated from postgraduate or PI research must be assessed as to its hazard streams and disposed accordingly.	 Stored in 10 or 25L UN approved plastic drum For example, broken old thermometers 26L plastic lidded buckets Risk Assessment must be performed on the Waste 26L plastic lidded buckets (Low risk), purple lidded (toxics) according to its specific compatibility
Empty Glass Winchester Bottles.	Triple washed and disposed of using a licenced contractor.
Empty Plastic/Aluminium Bottles (used for the storage of non-toxics solutions) Empty Plastic bottles used mainly to hold acids. Aluminium bottles use to hold certain types of solvents.	Plastic bottles triple washed and disposed of using a licenced contractor.
Chemically contaminated glass and sharps (see decision tree Appendix 4).	UN and Contractor approved containers only.
Irregular Laboratory smalls. This waste stream is dealt with on a case-to-case basis depending on the type of waste	All this type of waste must be collected in suitable storage containers and labelled appropriately (Appendix 1) and stored <u>compatibly</u>.

Lab small pack refers to a drum or other container containing multiple lab small bottles each containing a different substance.	
Unknowns - Chemicals These are chemicals which are unlabelled and there is no or limited information on their origin and identity.	The Unit should endeavour to find out as much information as possible about the specific chemical(s). If there is no information, then the services of the licenced disposal company will be required to assist in identifying the chemical for disposal purposes. This is a very expensive option.
Equipment	**Decontamination of equipment is required and certificate to be added, prior to removal or disposal.** See Appendix 2 for Blank Decontamination Certificate Removal of equipment through Stewarding Request Form

Table 2 Main Biohazard Waste Categories to be considered as Hazardous (Non-exhaustive)

Biohazardous Waste	
GMO/GMM Class 2 and 3	**Must be sterilised on site**, followed by disposal into the yellow bin stream for specialist removal
GMO/GMM Class 1	Can be sterilised on site, followed by yellow bin stream for specialist removal
Biological Agents Class 2 and above	Must be sterilised on site, followed yellow bin stream for specialist removal
Biological Agents Class 1	Can be sterilised on site, followed by yellow bin stream for specialist removal
Unknowns - Biologicals	A Risk assessment must be performed, to assess what class of Biological Agents can be reasonably assumed to be present. Treat as Class II minimum.
Sludge / Slurry mixes	**A Risk Assessment to be performed to identify the Class of individual sludges.** Proceed as per classification (see above)
Biologically contaminated glass and sharps (see decision tree Appendix 4).	UN and Contractor-approved containers only.
Irregular Laboratory smalls. This waste stream is dealt with on a case-to-case basis depending on the type of waste **Lab small pack** refers to a drum or other container containing multiple lab small bottles each containing a different substance.	**Decontamination of equipment is required and certificate to be added, prior to removal or disposal.**
Equipment	**Decontamination of equipment is required and certificate to be added, prior to removal or disposal.** See Appendix 2 for Blank Decontamination Certificate Removal of equipment through Stewarding Request Form

Table 3 Radioactive materials

Liquid Solid (solid consumables, tips, tissues…) Physical Sources	Contact the **Radiological Protection Officer**. Follow SOPs in place in facility

Note that all categories of waste mentioned in **Table 1, Table 2** and

Table 3 MUST be accompanied by a Unit specific SOPs and Risk Assessment(s).

5. Responsibilities

Name	Responsibility
Chief Operating Officer	Policy Owner
Health & Safety Officer	• Reports on chemical/biological safety compliance to the Director of Safety (Chief Operating Officer) and to the UMT and Governing Authority via the Safety Working Group. • Consults on relevant safety management policies through the Safety Working Group.
Heads of Units	• Ensure that procedures are in place to reduce and safely manage all the Unit's hazardous waste streams. • Ensure that the relevant Risk Assessment(s) are completed. • Appoint authorised persons within the Unit who are responsible for the management of hazardous waste. • Ensure that an up-to-date inventory of all hazardous waste streams is maintained in their Unit. • Ensure that suitable locations are provided for the storage of hazardous waste. • Ensure that ventilation checks of flammable cabinets used for the storage of flammables are carried out (Link to B&E LEV Policy). • Ensure that suitable personal protective equipment is provided. • Ensure that emergency procedures are in place and that the relevant staff/students know how to respond. • Ensure that oversight of waste management is included in Safety Inspections.
Principal Investigators	• Ensure that before beginning any work with hazardous waste, a detailed **Risk assessment** is completed. • Ensure that all research workers working with hazardous waste have undergone relevant training in chemical safety, biological safety and in Unit procedures including the SOPs. • Provide and maintain suitable personal protective equipment for general work and in the event of an emergency. • Clearly identify areas within the laboratory/building approved for the interim storage of the different hazardous waste streams. • Ensure that emergency procedures are in place and that the relevant staff know how to respond. • Notify relevant technical staff of the proposed work and associated hazards. • Maintain training records and, if requested, make them available for review. • Monitor compliance with safe working practices.

	• Report any incidents to the Health and Safety Office and the Unit Safety Coordinator.
Chief Technical Officers	• Ensure that before beginning any work with hazardous waste, a detailed **Risk assessment** is completed. • Ensure that all technical staff working with hazardous waste have undergone relevant training in chemical safety, biological safety and in Unit procedures including the SOPs. • Provide and maintain suitable personal protective equipment for general work and in the event of an emergency. • Clearly identify areas within the laboratory/building approved for the interim storage of the different hazardous waste streams. • Ensure that emergency procedures are in place and that the relevant staff know how to respond. • Notify relevant Chief Technical Officer/ Head o Unit of the proposed work and associated hazards. • Maintain training records and, if requested, make them available for review. • Monitor compliance with safe working practices. • Report any incidents to the Health and Safety Office and the Unit Safety Coordinator.
Research and Technical Staff	• Read and understand the Risk assessment and attend training on this. • Attend specific training in relation to working with hazardous waste. • Comply with local procedures in relation to working with hazardous waste. • Use the personal protective equipment prescribed for the task. • Be aware of the location of the Safety Data Sheet(s) and other guidance. Read and understand those relevant to their work. • Know the location of the nearest safety shower/eye wash. • Be aware of the emergency procedures. • Report any incidents to their supervisor. • Read and understand SOPs and Risk Assessments related to their activities
All Staff and students e.g. visitors	Do not engage with spills of any kind Report any incidents to their supervisor, technical staff or security

3.0 Related Documents Resources

3.1 Safe Operating Procedure:

Each Unit shall develop specific Standard Operating Procedures (SOPs) covering the generation and management of hazardous waste. These documents shall detail locations in particular where waste is kept, handled, stored and removed from and will also highlight the following specifics for that Unit:

- Chemical and/or Biological Agents waste generated),
- exact criteria for the acceptability of waste,
- special procedures for waste not qualifying for the Unit's waste management scheme.

- detail emergency response and training required for all users.

SOP will also identify who is responsible for actions (i.e. oversight, implementation, generating waste, pooling, collecting, moving or transporting, storing waste, emergency contacts, trainers, purchasing…) for each Unit.

3.2 Lab Clearance Form See Appendix 5

3.3 Green practices: Acetone recycling, A convenient guide to help select replacement solvents for dichloromethane in chromatography

Appendix 1. Chemical Waste Label

Chemical Waste Name:

MAX FILL LINE



Chemical composition	CAS Number	%	Chemical composition	CAS Number	%

Name of Preparer:

☐ **Teaching Module:**

☐ **Research PI: .....**

Filling Commencement Date:

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Appendix 2. Blank Decontamination Certificate

Decontamination		
Building:	**Room**	**Department:**
Item: ☐ Centrifuge ☐ Freezer ☐ Fridge ☐ Incubator ☐ Liquid Scintillation Counter (LSC) Location of LSC_____ ☐ Other (specify):		**Hazards Used with the Equipment:** ☐ Biohazards ☐ Chemical Hazards ☐ Radiation Hazards
Item Inventory Identification Number:		

Decontamination Date:	**Decontaminant Used:**	**Contact Time:**

Part B. Signature

I confirm that the item detailed here has been appropriately decontaminated against the hazards indicated above. This equipment is to be transported to a new location, sent for repair or surplus. Please contact the undersigned with questions pertaining to the equipment.

Signature:_____ Signature:_____

Unit: _____ Unit:_____

Date: _____ Date: _____

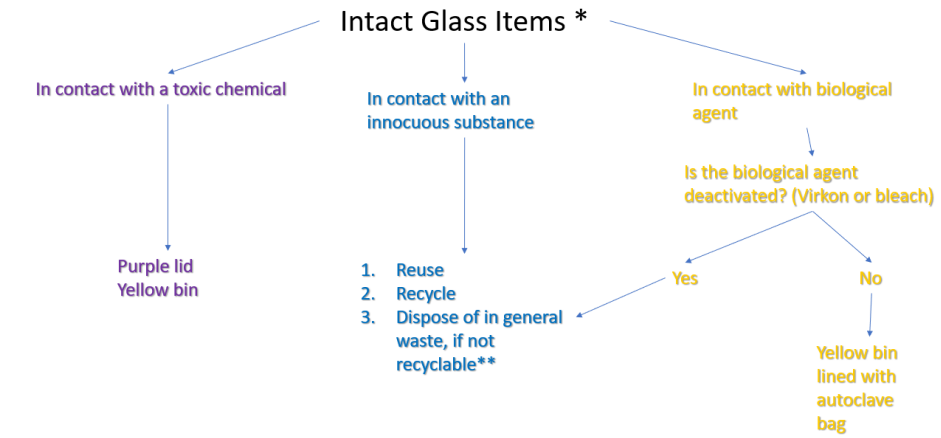
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Appendix 3. **Segregation and Packaging of Specialised Waste**

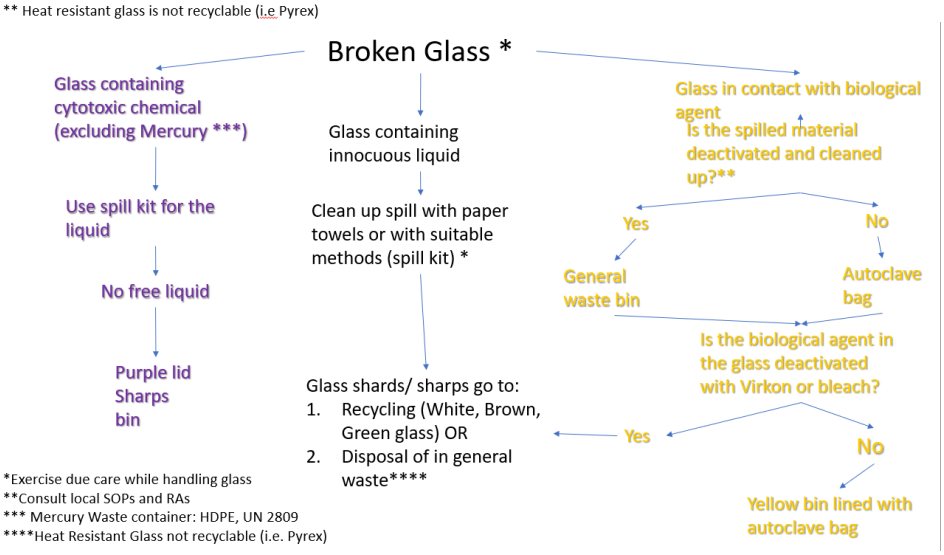
Waste Type	Container type	Lid colour	Notes	Container example
Needles, syringes and contaminated sharps	Sharps	Orange/ blue		
Contaminated cytotoxic sharps, unused medicines	Sharps	Purple	No free liquid	
Contained blood and body fluids with absorbent, hard plastic instruments	Yellow Lidded Container		No sharps, free liquids, heavy metals or chemically contaminated waste	
Non-sharps cytotoxic waste and pharmaceuticals	Purple Lidded Container	Purple	No sharps or free liquid	
Recognisable anatomical waste, placentas, large metal objects and non-autoclaved microbiological cultures	Black Lidded Container	Black	No sharps or free liquids	
Soft waste only	Bag	Yellow	No sharps, free liquids, hard objects or chemically contaminated waste	

Note that maximum weight for each container is written either on the handle or near the UN code

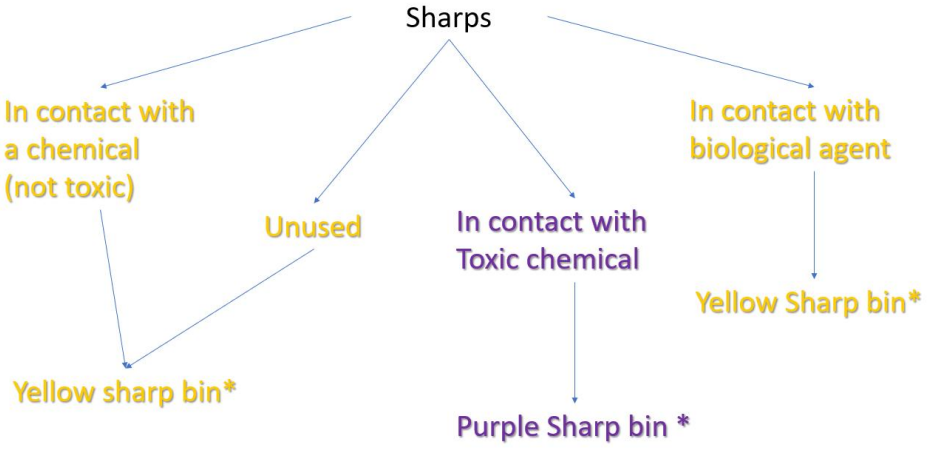
Appendix 4. Decision Trees for Sharps Waste Streams



*Exercise due care while handling glass
** Heat resistant glass is not recyclable (i.e Pyrex)



*Exercise due care while handling glass
**Consult local SOPs and RAs
*** Mercury Waste container: HDPE, UN 2809
****Heat Resistant Glass not recyclable (i.e. Pyrex)



*all bins must be approved sharps containers

Appendix 5. **Lab Clearance Form see link here**