

Heron Island Research Station (HIRS) Chemical Waste

1. Scope

This policy applies to collection, transport, storage and disposal of chemical wastes and includes:

- Disposal and collection of liquid wastes;
- Disposal of inert solid wastes;
- Collection of categorised liquid wastes;
- Collection of special wastes (individually packaged);
- Labelling chemical waste containers; and
- Chemical waste manifest.

The following categories of waste are not covered by this procedure and require specific handling to meet legal obligations. If any of these wastes are mixed with chemical waste, the chemical waste must be disposed of as the waste it is mixed with. All safety precautions required by MSDS or this procedure for chemical waste must still be met when disposing with other waste.

- Clinical and related (pathological) waste
- Biological waste
- Cytotoxic drugs and related waste
- Radioactive waste

Check with the safety officer in your school or centre for relevant procedures and/or refer to the EMS procedures 9B, 9C and 9D.

2. Objectives

- To collect, store and dispose of chemical wastes in an environmentally sound manner;
- To comply with environmental and health legislation for disposal of chemical wastes;
- To provide a chemical waste classification system within The University of Queensland; and
- To avoid risks to health, safety and the environment.
- Prevent the local bird population from accessing waste bins.

3. Procedure

3.1 *Chemical Waste*

3.1.1 Inert Solid Waste

Insoluble solids that are of **low toxicity and low reactivity** (e.g. ferric oxide, aluminium oxide, diatomaceous earth) may be disposed of in the general waste stream. Such materials shall be packaged or wrapped to prevent the generation of any nuisance or harmful dusts.

3.1.2 Liquid Chemical Waste

It is the responsibility of the Laboratory Technicians to provide drums for the collection of chemical waste at the station.

BE AWARE

All chemical waste drums must be labelled and manifested. Not ensuring this will increase difficulty and cost of removal and disposal of wastes.

Any spills during transfer or bulk handling of wastes must be **contained**. Under no circumstances are chemical wastes to be discharged, washed, or placed by any means into the stormwater or sewage system. All spills must be **collected** and disposed of as chemical waste.

3.1.3 Storage of Liquid Chemical Wastes

- Labels must be attached to every container with all details to be completed;
- The containers will generally be 20 litre plastic drums. Glass will be used in some cases (e.g. chromic acid);
- Only plastic drums or glass containers provided or approved by HIRS will be collected. These containers are not to be used for any other purpose.

NOTE: The responsibility for classification, labelling, manifesting and storage of wastes rests with you.

3.1.4 Labelling

All hazardous chemicals, including those that are wastes, must be comprehensively labelled in accordance with the *Workplace Health & Safety Regulations* and the *Australian Code for the Transport of Dangerous Goods by Road and Rail*.

The label for hazardous chemical waste must include:-

- A description of the constituents of the waste in as much detail as practical (generic descriptions such as 'flammable liquid waste' are not sufficient);
 - Appropriate dangerous goods class and subsidiary risk labels; and
 - A container identification number.
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- *A formatted label will be provided on the container along with relevant dangerous goods class diamond. The waste generator must then collect the containers from HIRS Laboratory staff.*
 - *Only one 'individually generated' chemical waste is permitted in each container, that is, do not mix chemical waste from different processes even if they are of similar properties. The waste disposal contractor will assess which wastes may be combined and will perform this task.*

This will permit:

- *maximum reclamation of recyclable waste,*
- *segregation for specific treatment processes, and*
- *comply with labelling, storage and handling obligations.*

The waste generator's task is to PRINT on the label IN PENCIL, the following:

- concentration of each ingredient
- waste generator's name, department/centre, and contact phone number.

Note: Illegible or insufficient labelling of containers and/or using containers not supplied by HIRS will need to be rectified before researchers leave the island or substantial waste disposal fees shall be incurred.

When requesting empty waste drums the following information is required:

- Number of containers required and an estimate of expected use.
- Quantity - a total volume estimate of 'Waste X' generated per week/month/year (pick one)
- Name - list each ingredient
- Concentration - for each ingredient as % or PPM
- DGC - Dangerous goods class, if any (refer to Material Safety Data Sheet (MSDS))

WARNING

Disposal of chemical wastes to the sewer system is absolutely prohibited.
Offenders will be Prosecuted.

3.1.5 Storage of Chemical Wastes Prior to Collection

- It is essential that the chemical waste container used is suitable for the waste (e.g. 2.5 litre glass Winchesters). Each chemical waste container should be clearly labelled and as far as is practical, should be kept closed;
- Containers of chemical wastes should be kept in a designated area - clear of exits, away from potential damage or the risk of ignition by flames or electrical equipment. The use of a fume cupboard for transfer operations should be considered;
- Where there is more than 10 litres of flammable liquid waste it will be necessary to keep it in a flammable liquids cabinet;
- All wastes are to be collected from a specifically designated area in laboratory;
- Designated areas should be clear of exits, fire stairs, means of escape from buildings, aisles, ignition sources (including switchboards and electrical equipment) and places where combustible wastes are kept;
- All waste containers in these areas should be closed with the proper lid; and
- HIRS should keep sufficient stocks of absorbents, neutralising agents and clean-up equipment to deal with spills and leaks of chemical waste.

3.1.6 Storage, removal and disposal of chemical waste

Storage

Chemical waste containers shall be stored in the appropriate compartments in the Chemical Store (refer to the Chemical Waste Store Operating Procedure).

Removal and Disposal of Chemical Waste

All chemical waste containers shall be taken from Heron Island for disposal.

Once a chemical waste container is full or is unlikely of being filled within a reasonable time, it should be returned to Gladstone on the barge, along with the chemical waste manifest. The chemical waste contractor shall be notified and shall collect the chemical waste containers and take them for disposal.

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| Chemicals | <ul style="list-style-type: none">• Wastes are collected from the lab and placed directly into the appropriate chemical waste container.• Containers must be labelled.• Containers shall be stored in the appropriate compartment within the Chemical Store before final disposal. | <ul style="list-style-type: none">• Full containers are transferred to the barge on the next day of collection. | JJ Richards or UQ Chemical Store |
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3.2 Collection of Special Wastes

Solid or liquid wastes that cannot be collected in the normal chemical waste system will generally require special treatment and individual hazard assessment. The Department of Environment and Local Authorities have introduced very strict guidelines for the handling of these wastes and compliance is mandatory. Depending on the materials, special wastes will be disposed of by a chemical waste contractor.

The following procedures apply:

- You are to inform HIRS of all wastes to be collected; and
- Damaged and leaking containers of special wastes will not be collected. You should ensure that these are repackaged before requesting their collection.

Queries regarding chemicals which have, or may develop unstable or explosive characteristics are to be addressed to the Director of Occupational Health and Safety Unit (St Lucia Campus) on 07 336 52563 or ext. 52563.

3.3 UNKNOWN OR UNLABELLED WASTES AND DAMAGED CONTAINERS

Containers of special waste that are of unknown identity pose additional problems. As well as there being a greater risk in their handling, it is mandatory to dispose of them by the most thorough (and expensive) method. **Researchers may be charged for additional costs involved in disposing of “unknown” chemical wastes.**

Unlabelled chemical waste will not be accepted for collection. The Workplace Health and Safety Regulations require that all hazardous substances (including those that are wastes) be properly labelled. Chemical wastes should be clearly identified in accordance with Section 9.3. If the chemicals are not fully characterised, they should at least be labelled with as much information as possible (e.g. mercury compounds and organophosphorus pesticide).

If, despite every effort, the contents of currently held containers cannot be identified they should be marked “CHEMICAL WASTE - CONTENTS UNKNOWN”.

3.4 Scrubber Liquid Waste

Liquid waste from scrubbers will require changing on a regular basis. These wastes must only be removed by a licensed contractor to a licensed disposal facility. When the liquor is required to be disposed of the following must occur:

- A sample of the liquor must be taken and analysed for the contaminants and their concentrations at a recognised laboratory;
- A licensed contractor is to be contracted to remove the waste. A copy of the results of the laboratory analysis must be supplied to the contractor when commissioning them.
- A copy of the disposal receipt must be returned to HIRS from the contractor.

The HIRS Manager is responsible for the disposal of the scrubber liquor.

4. Spills

Any spills during transfer or bulk handling of wastes must be contained. Under no circumstances are chemical wastes to be discharged, washed, or placed by any means into the stormwater or sewage system. All spills must be collected and disposed of as chemical waste.

5. Waste Disposal Table

The Waste Disposal table explains the procedures for dealing with waste streams, together with appropriate contacts for additional information.

6. Waste Process Responsibilities

6.1 Waste Generators

Chemical Waste Generators include students, laboratory technicians, researchers and lecturers. It is the responsibility of the chemical waste generators to observe the following:

- To segregate the chemical wastes from other wastes to avoid contamination;
- To collect, classify, label, manifest chemical wastes in accordance with this policy.
- To store all wastes in the appropriate locations and in a secure manner.
 - Avoid keeping unsecured wastes in areas accessible to bird life; and
 - Avoid keeping wastes in inappropriate locations that cause contamination of soils during breakage or spillage.
- To arrange for the correct disposal of all chemicals including unused chemicals and wastes brought to and/or generated at HIRS. There are appropriate containers for all the chemical waste stream located at the Research Station.

6.2 Manager, Heron Island Research Station

- Ensure that students and staff are aware of the operating procedure for chemical wastes as applicable;
- Provide adequate environmental management training;
- Review the waste management program as necessary; and
- Disposal of scrubber liquid wastes.

7. Definitions

7.1 Waste

Under Section 13 of the *Environmental Protection Act, 1994* waste is defined as “any gas, liquid, solid or energy (or a combination of wastes) that is surplus to, or unwanted from, any industrial, commercial, domestic or other activity, whether or not of value.”

7.2 Chemical Waste

Any waste of a chemical nature that has the potential to pose a chemical threat to health, safety and/or the environment, or is chemically hazardous.

7.3 Radioactive Wastes

For the purposes of this document, radioactive wastes are defined as wastes which, because of their radioactive content, may require specific management arrangements.

8. References

- Australian Standard AS2243:1995 Safety in Laboratories
- Building Act 1975
- Building (Flammable and Combustible Liquids Regulations) 1994
- Environmental Protection Act 1994
- Fire and Rescue Authority Act 1990 and Regulations
- Health Act 1937
- Radiation Safety Act 1999
- Sewerage and Water Supply Act 1949 and Regulations
- Transport Operations (Road Use Management) Act 1995
- Workplace Health and Safety Act 1995 and Regulations
- Code of Practice for the Management of Hazardous Substances at Work 1995
- Environment Protection (Waste Management) Regulation 2000
- Dangerous Goods Safety Management Act & Regulation 2001