

Moreton Bay Research Station (MBRS) 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); and
- Collection of other items – oil, gas cylinders and batteries.

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 Waste
- Animal 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.

3. Procedure

Web site to request chemical waste containers and subsequent chemical waste collection is: <http://www.science.uq.edu.au/facilities/content/uq-science-store> (Ensure you have an up to date 'Profile' before you submit a waste request). Enter the waste details into the 'Comments' field if you cannot select the substance from the list.

For queries and assistance only, please email:
chemwaste@uq.edu.au

3.1 Liquid Waste

On arrival to the station, all users must supply the Manager of MBRS with a complete list of chemicals brought onto the station. This list will then be recorded in the chemical register. All toxic and flammable substances must be kept locked in the toxic or flammable cupboards when not in use. The Manager of MBRS will issue users with a key for access.

No liquid chemical waste is to be disposed of to sewer at the Moreton Bay Research Station. Therefore, all liquid wastes must be disposed of by the chemical waste collection system. For disposal of these wastes, the following procedure is to be followed:

- Prior to arriving at the island, the person generating the waste must determine the nature and volume of waste expected to be generated at the research station.
- Then contact the University Chemical Store (refer above) and order the appropriate number of 5 litre or other appropriate 'dangerous goods grade' containers and type of containers to contain **all** the waste. A formatted label will also be provided on the container along with relevant dangerous goods class diamond. The waste generator must then collect the containers and bring them with them to the research station.
- 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 insufficiently labelled containers and/or containers not supplied by the University Chemical Store will not be collected until the criteria are met.

All waste generated and associated containers must be removed by the generator of the chemical waste.

3.2 Solid Chemical Waste

All solid wastes must be disposed of as follows:

- Waste must be sealed in an appropriate and compatible container (refer to the MSDS). Where applicable, the container should be labelled with:
 - the name, total quantity and concentration of the substance/s,
 - appropriate risk and safety phrases
 - dangerous goods diamonds.

Once packaged in accordance with the above, the chemical waste shall be given to the Manager, Moreton Bay Research Station for temporary storage. All waste must be taken from the Station by the user and disposed of in the appropriate manner back at their home institution. Charges will apply for the removal and disposal of chemicals from the Station by Management.

3.3 Collection and Storage

Once chemical waste has been delivered to the Manager, Moreton Bay Research Station, it is to be stored in the following manner:

- Adequate security and ventilation;
- Segregation of the different class of wastes as required by AS2243.2004;
- In an area that is bunded in accordance with AS2243.10:2004; and
- Materials, including safety equipment, nearby for clean up of spills.

3.4 Disposal

All chemical wastes are to be disposed of through the University Chemical Store. All chemical waste generators at Moreton Bay Research Station are to arrange for transport of the stored waste back to the St Lucia Campus.

Chemical waste is to be transported back to the campus in the following manner:

- Chemical wastes must be held in appropriate packaging and appropriately labelled (as stated above);
- The total volume of waste being transported must not exceed 250kg.
- Chemical wastes must be segregated as required by AS2243.10:2004;
- Any vehicle used to transport the waste must be a University owned and marked vehicle;
- Any vehicle used to transport the waste must carry sufficient equipment to clean up any spill as a result of an accident or spill.

3.5 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 MBRS from the contractor.

The MBRS manager is responsible for the disposal of the scrubber liquor.

3.6 Other Items – Oil, Gas Cylinders, Batteries and Paint

3.6.1 Oil

Used oil is a recyclable resource and should be managed carefully to protect the environment. This waste is to be treated as Chemical Waste.

The Chemical Store will arrange for used oil to be sent to a facility that specialises in used oil collection and reprocessing of used oil.

- Waste Oil must be sealed in an appropriate and compatible container.
- Where applicable, the container should be labelled with:
 - the type of oil and total quantity,
 - waste generator's name, school/centre, and contact phone number.

3.6.2 Gas Cylinders

- If stored, cylinders should be segregated by hazard, with different hazard classes separated.
- Gas storage areas should be secured and separated from other areas of chemical storage.
- All cylinders should be at least 3m away from ignition sources and secured to a solid surface.
- Empty gas cylinders must be returned to the supplier.
- For collection contact relevant supplier. (BOC Ltd, Linde Gas Pty Ltd, Air Liquide Aust Ltd)

3.6.3 Batteries

The collection and disposal of batteries includes the following types of batteries:

Battery Type	Common Uses
Alkaline	Cassette players, radios
Lithium	Cameras, watches, computers
Nickel cadmium batteries	Power tools, kitchen appliances
Lead-acid	Video cameras, computers, portable radios, fork lifts

- To dispose of batteries, either send them to the Chemical Store through internal mail or arrange for collection as below: (Note: do not store large quantities of batteries – send immediately when they are flat)

Dry batteries	Wet batteries
Seal the batteries in an appropriate container and place them in the internal mail to: University Chemical Store Cnr Glasshouse Road and Walcott St St Lucia campus	The Chemical Store will collect wet batteries. To request collection: http://www.science.uq.edu.au/facilities/content/uq-science-store (Ensure you have an up to date 'Profile' before you submit a waste request)

- The University Chemical Store arranges for the batteries to be sent to appropriate battery recycling facilities.

Please note:

- Nickel cadmium batteries (NiCads) contain cadmium, which is potentially carcinogenic and should not be placed in general waste bins.
- Rechargeable batteries last longer thus reducing the number of batteries purchased. By reducing the amount of batteries procured and disposed of, you can help reduce the amount of environmentally harmful wastes discharged.

3.6.4 Paint

- Unused paint may be allowed to dry (set hard) in the original paint container by mixing in equal parts of sand, dirt or sawdust and leaving the lid off until set. The hard paint may then be disposed through the general waste stream with the lid permanently removed.
- Twin pack paints and epoxys may be mixed together and allowed to cure in a similar way and discarded into 'General Waste' when set hard. Caution – some heat may develop with some epoxys and resins.

- If this process is not possible, large quantities of paints may be processed as ‘Chemical Waste’ in the usual manner.

4. Waste Process Responsibilities

4.1 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 ensure that chemical waste containers have been ordered and collected before going to the Moreton Bay Research Station;
- To segregate the chemical wastes from other wastes to avoid contamination;
- To arrange for the correct disposal of chemical waste including the removal of unused chemicals and wastes brought to and/or generated at MBRS; and
- All necessary equipment to clean up the area should be available, in the case of accidental spillage.

4.2 Manager, Moreton Bay 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.

5. Definitions

5.1 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.”

5.2 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.

5.3 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.

6. References

- Building Act 1975
- Environmental Protection Act 1994
- Environment Protection (Waste Management) Regulation 2000
- Fire and Rescue Authority Act 1990 and Regulations
- Health Act 1937
- Plumbing and Drainage Act 2002
- 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
- Dangerous Goods Safety Management Act and Regulation 2001
- Australian Standard AS/NZS 2243(Set):2006 Safety in Laboratories
- Advisory Standard 2003 Hazardous Substances