

## **Heron Island Research Station (HIRS) Chemical Store**

### **Appendix 1**

#### **1. Scope**

This operational procedure is limited to the use and operation of the Chemical Store situated at HIRS.

#### **2. Objectives**

The Chemical Store at The University of Queensland Heron Island Research Station has been designed and will be managed in order to comply with environmental, health and safety regulations. The chemical store will be managed in such a way as to:

- Avoid risk to health and safety;
- To manage the storage of and ensure the responsible disposal of chemicals from Heron Island;
- To minimise the volumes of chemicals stored at the Research Station; and
- To make researchers and visitors to HIRS responsible for their own chemicals and chemical wastes.

#### **3. Responsibility**

The responsibility for the Chemical Store is as outlined below:

<b>Area of Responsibility</b>	<b>Person Responsible</b>
Overall responsibility	Director of the Heron Island Research Station
Maintenance of the structure	Maintenance Manager
Stocks, distribution, access to flammables compartment and disposal of waste	Laboratory Manager
Stocks, distribution and access to corrosives compartment and disposal of waste	Laboratory Manager
Stocks, distribution and access to maintenance compartment and disposal of waste	Maintenance Manager

## **4. Design**

The Chemical Store is divided into two compartments. Each compartment is to exclusively house the following:

- Class 3 dangerous goods and combustible liquids for laboratory use;
  - One sub-compartment for laboratory stocks;
  - One sub-compartment for maintenance stocks.
- All class 8 and class 5.1 chemicals and other miscellaneous stocks

The structure has been constructed to the requirements of AS 1940-1993 and AS 2243.10-1993, incorporating the following features:

- Fire rated walls, floor and roof;
- Required separation distances between compartments;
- Natural ventilation;
- Natural lighting supplied through skylights (transparent roof sheeting);
- Individually banded compartments to contain and prevent mixing of spills;

## **5. Operation of the Chemical Store**

### ***5.1 Use***

The Chemical Store will be used to house all chemicals of a flammable or corrosive nature in quantities that are considered dangerous to store anywhere else at the Research Station. Additional shelving has been supplied for personal stocks bought to the Research Station by researchers and they may remain separate from the Station's own stores.

The maintenance section of the store will be used to house all paints, solvents and other materials used in the maintenance of the Research Station.

### ***5.2 Segregation***

Each compartment will house only the goods class of chemicals that it has been designed for. There is to be no mixing of chemical classes within the compartments, other than that designed for.

### ***5.3 Capacity***

Each compartment in the Chemical Store has been designed to facilitate the present needs of the Research Station.

Table 1 outlines the storage capacity for each of the compartments.

Table 1

		Cabinets	Shelving	Floor storage	Waste Storage
<b>Flammables</b>	<b>Laboratory</b>	1 cabinet of 250 litre capacity.	12 metres of shelving. 4 shelves high.	None	Bottom shelf primarily. Others may be used if necessary.
	<b>Maintenance</b>	None	20 metres of shelving. 4 shelves high.	None	Not Applicable
<b>Mixed Chemical Store</b>	<b>Acids</b>	1 cabinet of 160 litre capacity	None.	None	Sump and bottom shelf of cabinet
	<b>Alkalis</b>	1 cabinet of 160 litre capacity	None	None	Sump and bottom shelf of cabinet
	<b>Oxidising Agents</b>	1 cabinet of 60 litre capacity	None	None	Sump and bottom shelf of cabinet
	<b>Poisons</b>	1 cupboard	None	None	Can be stored on lowest shelf of cupboard
	<b>Misc</b>	None	6 metres of shelving	None	Not applicable

If necessary, floor space can be used for storage in all compartments, provided the shelving is insufficient and use of the floor space can be done safely.

#### 5.4 Spills

Any spills during transfer or bulk handling of chemicals or chemical wastes must be **contained**. Under no circumstances are chemicals 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 or hazardous waste.

## WARNING

Disposal of chemicals to the sewer system is absolutely prohibited.  
Offenders will be prosecuted.

#### 5.5 Access/Security

The Chemical Store is on the HIRS's master key system. The Laboratory Manager and the Maintenance Manager will have access to the store at all times.

Only maintenance personnel will be given access to the maintenance compartment. Any personnel who enter the maintenance compartment will only do so with the permission of the Maintenance Manager.

Other staff and researchers may have access to the flammable and corrosives compartment, only if permission is granted by the Laboratory Manager or his/her delegate. Access is limited to office hours.

## **6. Safety**

Safety equipment will be supplied as part of the construction and operation of the Chemical Store. The equipment that will be supplied on site will include:

- Fire extinguishers;
- Chemical shower;
- Eye wash;
- Spill containment and clean up equipment;
- First aid equipment; and
- Signs (prohibition signs, mandatory signs and warning signs);

It is the responsibility of the Maintenance Manager and the Laboratory Manager to ensure that all the safety equipment is available and accessible and in good working order.

## **7. References**

- The Building Code of Australia and the Queensland Appendix to this Code.
- The Amenities Code of Practice of the Workplace Health and Safety Act 1989.
- Dangerous Goods Safety Management Act & Regulation 2001
- AS 1940-1993 The storage and handling of flammable and combustible liquids
- The Workplace Health and Safety Regulations 1989:
  - Regulation 284 - bunding for storage of liquid dangerous goods.
- AS 2243.10-1993 Safety in laboratories - Storage of chemicals.