

Health, Safety and Environment Management System

HSE-PRO-005 Hazardous Chemicals Procedure

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1 Intent

James Cook University (JCU) recognises the obligation to manage hazardous chemicals in accordance with the *Work Health and Safety Act 2011 (Qld)* and the *Work Health and Safety Regulation 2011 (Qld)*.

JCU aims to:

- Ensure correct purchasing, use and storage of hazardous chemicals.
- Maintain an accurate inventory of hazardous chemicals, and the location of stores at the Townsville and Cairns campuses and at JCU sites outside those campuses.
- JCU Singapore is not covered by this procedure.
- Conduct the purchasing, use and storage of carcinogens in line with legislated requirements.
- Conduct the purchasing, use and storage of prohibited hazardous chemicals in line with legislated requirements.
- Manage chemicals of security concern appropriate to the level of risk.
- Ensure the correct placarding and storage precautions have been applied to hazardous chemicals.
- Notify the regulator as required of storage that exceeds the relevant manifest limits.
- Dispose of hazardous chemicals in a legislatively compliant and sustainable manner.
- Ensure that JCU will not be classed as a major hazard facility.

2 Scope

This Procedure has been written in the context that:

- JCU does not manufacture Hazardous Chemicals for sale.
- JCU does make mixtures of Hazardous Chemicals for use by JCU.
- Teaching and research is conducted at JCU campuses that use hazardous chemicals.
- There is currently no central storage location or warehouse, (JCU intends to progress towards a central store model with smaller satellite stores).
- That Schedule 10 Prohibited or Restricted Carcinogens, and the 11 chemicals of security concern are not to be purchased on credit cards.
- JCU controlled entities are not included within the scope of this Procedure. The controlled entities must manage their own compliance.
- Field samples may be collected using ethanol as a preservative and transported by air.
- JCU will at times possess Schedule 10 Prohibited and Restricted Carcinogens for research or analysis purposes.
- There are chemicals of security concern purchased, used and stored by JCU.

This Procedure applies to all JCU employees, adjuncts, students, visitors, volunteers and contractors conducting activities with hazardous chemicals including:

- Research
- Teaching
- Study
- Maintenance or Construction
- Cleaning

JCU controlled entities may also conduct the above activities, and will need to ensure appropriate procedures and controls are in place. JCU does not directly control compliance for the controlled entities.

3 Definitions

Term	Definition
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th edition, approved by the Australian Transport Council. The ADG Code is accessible at the National Transport Commission website: www.ntc.gov.au
Dangerous Goods	Substances where the physical, toxic, or chemical properties present an immediate hazard. The criteria to classify such substances are set out in the Australian Dangerous Goods Code.
Schedule 10 Prohibited or Restricted Carcinogen	Carcinogenic substances that have been classified under the Work Health & Safety Regulation 2011 (Qld) Schedule 10.
GHS	'Globally Harmonized System of Classification and Labelling of Chemicals, 3 rd Revised Edition', published by the United Nations as modified under Schedule 6 of the WHS Regulation
Hazardous Chemicals	Substances where exposure can have an adverse effect on health. Any substance, mixture or article that satisfies the criteria of one or more of the "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" hazard classes, including a classification in Schedule 6 of the <i>Work Health & Safety Regulation 2011 (Qld)</i> .
IATA Dangerous Goods Regulations	International regulations for the transport of Dangerous Goods by air.
Schedule 11 Hazardous Chemical	Class 1 - Dangerous Goods - Explosives Class 2 - Dangerous Goods - Gases Class 3 - Dangerous Goods - Flammable Liquids Class 4 - Dangerous Goods - Flammable Solids; Substances Liable to Spontaneous Combustion; Substances which in Contact with Water, Emitting Flammable Gases Class 5 - Dangerous Goods - Oxidising Substances and Organic Peroxides Class 6 - Dangerous Goods - Toxic and Infectious Substances Class 7 - Dangerous Goods - Radioactive Material Class 8 - Dangerous Goods - Corrosive Substances Class 9 - Dangerous Goods - Miscellaneous Dangerous Goods and

	Articles
Schedule 11 Manifest	A manifest of "Schedule 11" that exceed the manifest quantity identified in Table 10.1, Schedule 11, of the Work Health and Safety Regulation 2011
11 Substances of Security	The 11 chemicals of security concern are listed in the " <i>National Code of Practice for Chemicals of Security Concern</i> ".

4 Duty, Obligations and Responsibilities

4.1 College Managers / Directors / Managers / Operations Managers of Divisions

- To ensure the requirements of this procedure are being met.
- To ensure that the Chemwatch manifest is maintained.
- Provide training to staff in regard to their obligations and duties for Hazardous Chemicals. Including:
 - Accessing Chemwatch search function at induction.
 - Chemwatch user training for any person responsible for maintaining a Chemwatch database.
 - Risk assessment training for persons performing chemical risk assessments.
 - The relevant dangerous goods shippers and packers training if sending freight by road, rail, air or sea.
 - Hazardous Chemical storage training, where a person is responsible for storing significant quantities of hazardous chemicals.
 - Training in the use, maintenance and storage of any personal protective equipment provided to control an exposure to a Hazardous Chemical.
 - Relevant training specific to the Hazardous Chemicals that will be encountered in the person's role.
- Approve establishment and increase in manifest quantity storages.
- Approve initial purchase of items listed in Schedule 10 Prohibited or Restricted Carcinogens of the *Work Health & Safety Regulation 2011* (Qld)
- Approve the initial purchase of the 11 chemicals of security concern.

4.2 Employees / Students/ Adjuncts/Volunteers

- To comply with this procedure.
- To attend training as required.

4.3 Research Students

- Must have current risk assessments for any:
 - Hazardous Chemicals
 - Schedule 11 Hazardous Chemicals
 - Schedule 10 Prohibited and Restricted Carcinogens
- The final disposal or storage of Hazardous Chemicals and Schedule 10 Prohibited and Restricted Carcinogens, must be considered and planned.

- The research student's JCU supervisor or sponsor must approve in writing the purchase, storage, use and disposal of Hazardous Chemicals, Schedule 11 Hazardous Chemicals and Schedule 10 Prohibited or Restricted Carcinogens.

4.4 Visiting Researchers / Students

- Visiting researchers or students who will purchase use and store Hazardous Chemicals and Schedule 10 Prohibited and Restricted Carcinogens must also comply with this procedure.
- Written approval must be provided by the visiting researcher or student's JCU supervisor before the substance is used in connection with JCU.

5 Requirements

Appendix 1 has an overview of the Hazardous Chemicals requirements.

5.1 Hazardous Chemical Categories

There are a number of classes of Hazardous Chemicals, under different legislation and codes of practice. A substance can be assigned to multiple categories, and as such the requirements for each of those categories may apply to the one substance.

The Safety Data Sheet (SDS) will typically identify the categories assigned to the hazardous chemical.

The categories covered within this procedure and the source documents for the classification are listed below:

- Hazardous Chemicals have an effect on health. A substance is deemed to be hazardous if it meets:
 - the approved criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]; or
 - A substance is deemed to be hazardous under the “*Globally Harmonized System of Classification and Labelling of Chemicals (GHS)*” hazard classes, including a classification in Schedule 6 of the *Work Health & Safety Regulation 2011 (Qld)*.
- Schedule 11 Hazardous Chemicals (Referred to as Dangerous Goods):
 - The criteria used to determine whether substances are classified as dangerous goods are contained in the Australian Dangerous Goods Code.
- Schedule 10 Prohibited or Restricted Carcinogens:
 - Are listed in Schedule 10 of the *Work Health & Safety Regulation 2011 (Qld)*.
- The 11 Chemicals of Security Concern:
 - Are listed in the “National Code of Practice for Chemicals of Security Concern”.

5.2 Purchasing of Hazardous Chemicals

All purchasing is to occur in compliance with this procedure and FMPM 710 Procurement Policy and FMPM 711 Procurement Procedure.

Table 1 Schedule and Purchasing Requirement Hazardous Chemicals

Schedule	Description	External Permit/Approval Required	Purchasing Approval Required	Use Code Required	Other Purchase Methods	Supplier Requirements	Chemwatch
S10	Restricted or Prohibited Carcinogens	<p>Yes, via "Form 74 - Application for authorisation to use, handle or store Schedule 10 Prohibited or Restricted carcinogens"</p> <p>https://forms.business.gov.au/aba/form.htm?formCode=QldGov4-form74</p> <p>OR</p> <p>https://www.worksafe.qld.gov.au/injury-prevention-safety/hazardous-chemicals/managing-hazchem-risks/carcinogens</p>	<p>Approval required by the responsible supervisor and Dean or College Manager once relevant permits are obtained. These chemicals will only be approved for use where there is a genuine requirement for analysis or research. The HSE Biological, Radiation, and Chemicals Safety Advisor is to be notified of the carcinogen and be provided a copy of the permit and risk managed procedure, to maintain a register of approvals.</p> <p>A risk management procedure is to be supplied with the completed Form 74 to the regulator and the HSE Officer. The risk management procedure will need to contain:</p> <ul style="list-style-type: none"> - Hazard identification - Risk control - Why the chemical must be used - Storage details - Process description - Control measures to prevent exposure - Maintenance and testing procedures or control measures - Atmospheric monitoring - Biological monitoring - Health surveillance program - Spill and emergency procedures - Employee training and information 	<p>Use code 8438 with purchase requisition procedure</p> <p>http://www.jcu.edu.au/policy/public/groups/ever-yone/documents/expenses/jcudev_008270.pdf</p> <p>This approval will be sent to the Authorised Officers Delegated the Vice Chancellor's Authority.</p>	Purchase order only	A copy of the approval will need to be provided to the supplier to obtain the chemical.	Enter into Chemwatch with Maximum Storage Quantity

Schedule	Description	External Permit/Approval Required	Purchasing Approval Required	Use Code Required	Other Purchase Methods	Supplier Requirements	Chemwatch
			- Decontamination and waste disposal				
NA	Hazardous Chemicals	NA	NA	Use code 8432 with purchase requisition procedure http://www.jcu.edu.au/policy/public/groups/ever-yone/documents/expenses/jcudev_008270.pdf	Small volumes (<\$200.00) of Hazardous and Schedule 11 Hazardous Chemicals can be purchased on credit card provided the chemical is entered into the Chemwatch Inventory/Manifest for the storage location and all other requirements of this procedure have been met. Examples could include filling a jerry can with unleaded fuel.*	NA	Enter into Chemwatch with Maximum Storage Quantity

Schedule	Description	External Permit/Approval Required	Purchasing Approval Required	Use Code Required	Other Purchase Methods	Supplier Requirements	Chemwatch
S11	Schedule 11 Hazardous Chemicals (previously referred to as dangerous goods)	No, but where storage exceeds manifest quantities listed in Table 10.1, Schedule 11, of the Work Health and Safety Regulation 2011 "Form 73 - Notification of a manifest quantity" to be completed and a copy of the current manifest sent with the form. The form can be accessed at www.worksafe.qld.gov.au <ul style="list-style-type: none"> The College Manager or Dean must approve that the increase in quantity is required and will be stored as per the relevant procedures for the class of chemicals. The form is to be lodged in consultation with the JCU HSE Biological, Radiation, and Chemicals Safety Advisor. 	Approval by Supervisor	Use code 8432 with purchase requisition procedure http://www.jcu.edu.au/policy/public/groups/everone/documents/expenses/jcudev_008270.pdf	Small volumes (<\$200.00) of Hazardous and Schedule 11 Hazardous Chemicals can be purchased on credit card provided the chemical is entered into the Chemwatch Inventory/Manifest for the storage location and all other requirements of this procedure have been met. Examples could include filling a jerry can with unleaded fuel.*	NA	Enter into Chemwatch with Maximum Storage Quantity
NA	Non-hazardous Chemicals, Non Schedule 11	No	No	NA	NA	NA	NA
NA	11 Chemicals of Security Concern	No	Initial approval by College Manager/Dean	NA	Purchase order only	End user declaration form from supplier	Enter into Chemwatch with Maximum Storage Quantity

**If there is a need to exceed the \$200.00 credit card limit. Contact the JCU Procurement Unit to make arrangements.*

5.3 Requirements Applying to all Hazardous Chemicals

5.3.1 Safety Data Sheet (SDS)

A copy of the SDS is to be obtained by the person intending to order/store the hazardous chemical before the hazardous chemical is first obtained.

The current SDS is to be accessible to:

- A worker using, handling or storing the hazardous chemical.
- An emergency services worker who may be exposed to the hazardous chemical.

The requirement to possess the SDS does not apply if the hazardous chemical is only used and stored in quantities and by methods of use consistent with household application.

All SDS's are to be compliant with the requirements of Schedule 7 of the *Work Health and Safety Regulation 2011* (Qld).

An SDS can be authored and added to the JCU Chemwatch database by a person who is producing/manufacturing the substance.

5.3.2 Safety Data Sheets – for Research Chemicals, Waste Products or a Sample for Analysis:

Where it is not reasonably practicable to develop a full SDS, the following minimum information must be included:

- Name, Australian address and business telephone number of the manufacturer or importer.
- A statement that full identification or hazard information is not available for the chemical, and in the absence of full identification or hazard information, a precautionary approach must be taken by a person using, handling or storing the chemical.
- Chemical identity or structure.
- Known or suspected hazards.
- Any precautions applying to using, handling or storing the chemical.

5.3.3 Labelling

All hazardous chemicals must be correctly labelled as per the Globally Harmonized System (GHS) and Schedule 9 of the *Work Health and Safety Regulation 2011* (Qld).

- GHS compliant labels can be printed from the JCU Chemwatch system.
- Labels for mixtures can be created in the Chemwatch "Creedo" module. Access to the module can be provided by the HSE Biological, Radiation, and Chemicals Safety Advisor.

This requirement applies to decanted chemicals. However if the Hazardous Chemical is used immediately, and the container is thoroughly cleaned immediately, labelling is not required.

Pipe work is to have a Hazardous Chemical label, sign or other way of identifying the contents.

5.3.4 Pipelines

The owner of a pipeline used to transfer hazardous chemicals must manage risks associated with the transfer of the Hazardous Chemicals through the pipeline.

Where a hazardous chemical is transferred in a pipeline, a label or sign must be located near the pipeline to identify the contents.

5.3.5 Where JCU is Manufacturing, Supplying or Directly Importing a Hazardous Chemicals

The person manufacturing, supplying or directly importing a Chemical must;

- Determine if the chemical or mixture is a Hazardous Chemical or Schedule 11 Hazardous Chemical (dangerous good). As per:
 - *Globally Harmonized System of classification and Labelling of Chemicals*.
 - *Approved Criteria for Classifying Hazardous Chemicals [NOHSC:1008 (2004)]*. Until 31 December 2016.
 - *Australian Code for the Transport of Dangerous Goods by Road & Rail*. Until 31 December 2016.
 - Determine if the chemical is a scheduled drug or poison as per the *Uniform Scheduling of Medicines and Poisons (SUSMP)*.
- Prepare and provide a SDS, if practical, before manufacturing or importing the Hazardous Chemical. SDS to be compliant with section 5.3.
- Review the SDS every five years.
- Amend the SDS whenever necessary to ensure correctness.
- Provide a copy of the SDS on first supply and when requested.

Packing of the Hazardous Chemical must be compliant with Schedule 9, part 2 of the *Work Health and Safety Regulation 2011 (Qld)*.

The Hazardous Chemical must be correctly labelled as per the Globally Harmonised System of Classification and Labelling (GHS) and Schedule 9 of the Work Health and Safety Regulation.

GHS compliant labels can be printed from the JCU Chemwatch system.

5.3.6 Importation / Manufacture

If importing or manufacturing a Chemical that is not currently listed on the Australian Inventory of Chemical Substances (AICS), an application must be submitted to National Industrial Chemicals Notification and Assessment Scheme (NICNAS) to obtain a permit or certificate for the manufacture or importation.

To determine if the Hazardous Chemical is listed, search the Australian Chemical Inventory of Chemical Substances at the National Industrial Chemicals Notification and Assessment Scheme website (www.nicnas.gov.au). The criteria to determine if a substance requires notification can be found on the NICNAS website.

5.3.7 Register of Hazardous Chemicals

A register of Hazardous Chemicals used, handled, or stored at the workplace is to be kept at the workplace by the person responsible for the use and storage of the Hazardous Chemical.

The requirement to list items on the register does not apply if the chemical is a consumer product and a SDS is not required to be obtained under section 344 of the *Work Health and Safety Regulation 2011 (Qld)*.

The register must:

- Be up to date.
- Have a current SDS for each Hazardous Chemical.
- Be accessible to personnel that may use, handle or store the Hazardous Chemicals.
- Be maintained on the Chemwatch system as per Section 5.3.8.

Each Chemwatch access is to be set up to ensure that only the chemical inventory or manifest relevant to that person is available for viewing and editing.

The HSE Biological, Radiation, and Chemicals Safety Advisor will assign login details to the Chemwatch system and can be contacted at safety@jcu.edu. Permission for the access is to be provided in writing by the relevant supervisor.

The Chemwatch system can run reports for Hazardous Chemical Registers, Schedule 11 Manifest Report, and Schedule 11 Placarding reports controlled to the users log in.

5.3.8 Chemwatch Inventory

An inventory of the maximum quantity of Hazardous Chemicals expected to be stored in each location must be maintained on the JCU Chemwatch system by the person responsible for storing the Hazardous Chemical.

The Hazardous Chemicals are to be entered in the Hazardous Chemicals “manifest” structure within the Chemwatch system. This will include:

- Creating a manifest folder within the relevant JCU location, for example: Townsville, Cairns etc.
- Subfolder with Building number
- Next subfolder with room number
 - Assign building number and room as applicable into Store Title.

- Create storage location with contents for each individual storage cupboard/ fridge etc.

5.3.9 Management of Risk

A risk assessment is to be carried out for:

- Use of Hazardous Chemicals
- Use and storage of Schedule 11 Hazardous Chemicals
- Use and storage of Schedule 10 Prohibited or Restricted Carcinogens (taking into account Section 5.5 of this Procedure)
- Security of the “11 Hazardous Chemicals of Security Concern”.

Personnel that may have their health affected by a chemical should be consulted during a chemical risk assessment.

Risks associated with using, handling, generating or storing a Hazardous Chemical are to be managed in regard to:

- The hazardous properties of the Hazardous Chemical.
- Potential incompatibilities with other chemicals.
- Nature of work to be carried out.
- Any structure, plant, system of work that could interact with a Hazardous Chemical.
- Potential exposure to personnel.
- Emergency planning.
- If the chemical is a Schedule 10 Prohibited or Restricted Carcinogen.
- Health monitoring requirements.

Control measures are to be reviewed at least every five years and also:

- Where new information on the risks is obtained.
- Where a health monitoring report identifies that a person has elevated metabolites from exposure to a chemical, or has contracted a disease, injury or illness from exposure to a Hazardous Chemical.
- If air monitoring indicates that the relevant workplace exposure standard has been exceeded.

Where safety signs are required to manage a risk, the signage is to be visible, located near the hazard, and well maintained.

Safety equipment to be in place where Hazardous Chemicals are used, handled or stored, include:

- Appropriate personal protective equipment.
- Safety shower and eye wash facilities.
- First aid equipment.
- Emergency equipment as deemed by risk assessment.

At each location where Hazardous Chemicals are used, handled or stored, a spill containment system is to be in place. The spill containment system must not allow mixing of incompatible chemicals.

- Appropriate spill kits should be kept, and maintained as part of the spill contaminate system.

Hazardous Chemicals in containers, pipework, and other containers are to be protected from impact and excessive loads.

Storage and handling systems must be:

- Used only for the purpose for which they were designed.
- Operated, tested, maintained, installed, repaired and decommissioned having regard to the health and safety of workers.
- Operated by persons who have been given sufficient information, training and instruction to operate, test, maintain, or decommission a system used for Hazardous Chemicals.
- As far as practicable free of Hazardous Chemicals when decommissioned.

5.3.10 Training

Personnel are to be trained relevant to their role and responsibility. Training may consist of:

- Accessing Chemwatch search function at induction.
- Chemwatch user training for any person responsible for entering information into the Chemwatch database.
- Risk assessment training for persons performing chemical risk assessments.
- The relevant Dangerous Goods Shippers and Packers training if sending freight by road, rail, air or sea.
- Hazardous Chemical Storage training, where a person is responsible for storing significant quantities of Hazardous Chemicals.
- Training in the use, maintenance and storage of any personal protective equipment provided to control an exposure to a Hazardous Chemical.
- Relevant training specific to the Hazardous Chemicals that will be encountered in the person's role.

5.3.11 Personal Protective Equipment (PPE)

PPE must be:

- Suitable given regard to the hazard.
- Appropriate size for the person for comfort and performance.
- Clean and hygienic.
- In good working order.

Personnel provided with PPE must be given appropriate training in regard to:

- Fitting the equipment.
- Maintaining and storing the equipment.

Usage of respiratory protective equipment:

- Shall be in compliance with the requirements of AS/NZS 1715:2009 selection, use and maintenance of respiratory protective equipment.

5.3.12 Exposure Standards

No person is to be exposed to a chemical or mixture in an airborne concentration that exceeds the exposure standard for the chemical or mixture.

Australian National Exposure Standards are declared by Safe Work Australia. A current list can be accessed via the HSIS website -

<http://hsis.safeworkaustralia.gov.au/ExposureStandards>

Where there is no Mandatory Exposure Standard established for Australia, other established Exposure Standards such as Exposure Standards from the UK Health and Safety Executive (HSE) should be consulted to assist in minimising exposure to airborne contaminants.

Workplace exposure standards as relevant to the particular Hazardous Chemical will be adjusted for extended shifts and rosters outside of a five day working week, with 8 hour work days.

5.3.13 Exposure Monitoring

Exposure monitoring is to be carried out where it is not certain on reasonable grounds, whether or not the airborne concentration of the chemical or mixture, exceeds the relevant exposure standard. The exposure monitoring will need to be requested by the person supervising the use of the chemical, and coordinated through the JCU HSE Unit.

- Records are to be maintained by the JCU Health Safety & Environment team within the TRIM records management system for 30 years.

Results of the exposure monitoring must be readily available to those who may be exposed to the chemical or mixture.

5.3.14 Health Monitoring

Health monitoring must be carried out when there is significant risk to the worker's health because of exposure to a Hazardous Chemical listed in Table 14.1, Schedule 14 of the *Work Health and Safety Regulation 2011 (Qld)*.

- To organise health monitoring, the JCU HSE Biological, Radiation, and Chemicals Safety Advisor is to be consulted by the person supervising the potentially exposed employees.
- The worker is to provide consent to participate in the health monitoring program.
- Records of health monitoring are confidential and will be stored with the JCU Corporate Information and Records team within the Electronic Data Records Management System, TRIM. Records are to be maintained for 30 years.

- An appropriately qualified medical practitioner with experience and training relevant to occupational exposures is required to supervise the health monitoring.
 - The workers are to be consulted in selecting the medical professional.
- A copy of any health monitoring results is to be provided to the person undergoing the monitoring.
- See Section 5.5 regarding health monitoring for the use of Schedule 10 Prohibited or Restricted Carcinogens.
- A register of health monitoring being conducted by JCU is to be maintained in the “JCU Health Monitoring Register” kept by the HSE Unit.
- A copy of the health monitoring must be provided to WorkCover Queensland if the report:
 - Indicates the worker has contracted a disease, injury or illness as a result of work with Hazardous Chemicals that trigger the requirement for health monitoring; or
 - The health monitoring report includes a recommendation that the worker cannot continue carrying on working with the chemical that triggers the requirements for health monitoring.

5.3.15 Fume Cabinets

- Fume cabinets are to be installed, maintained and operated in line with the requirements of:
 - AS/NZS 2243.8:2014 Safety in Laboratories - Fume Cupboards
 - AS/NZS 2243.9:2009 Safety in Laboratories - Recirculating Fume Cabinets
- Testing of the fume cabinet face velocity is to be conducted annually.
- Fume cabinets are not to be used for the storage of Hazardous Chemicals.

5.3.16 Storage

The requirements for storage of Hazardous Chemicals and Schedule 11 Hazardous Chemicals are different dependent on the class of substance, type of storage and quantities stored.

The various classes of Hazardous Chemicals are to be stored as per the requirements for that class of chemical. Typically this is obtained from the relevant Australian Standard for each class:

- Class 1 - Dangerous Goods - Explosives
- Class 2 - Dangerous Goods - Gases
- Class 3 - Dangerous Goods - Flammable Liquids
- Class 4 - Dangerous Goods - Flammable Solids; Substances Liable to Spontaneous Combustion; Substances which in Contact with Water, Emitting Flammable Gases

- Class 5 - Dangerous Goods - Oxidising Substances and Organic Peroxides
- Class 6 - Dangerous Goods - Toxic and Infectious Substances
- Class 7 - Dangerous Goods - Radioactive Material
- Class 8 - Dangerous Goods - Corrosive Substances
- Class 9 - Dangerous Goods - Miscellaneous Dangerous Goods and Articles
- Management of chemicals in laboratories shall be maintained in line with the requirements of AS/NZS 2243 Safety in Laboratories series.

The Australian Standards database can be accessed from the JCU home page, through the JCU Library webpage, by selecting databases, selecting "S" in the alphabetical listing and then "Standards Australia" (http://www-public.jcu.edu.au/libcomp/resources/articles/JCUPRD_037562?utm_source=LibcompHomePage&utm_medium=Button&utm_campaign=Databases).

Schedule 10 Prohibited or Restricted Carcinogens are to be securely stored as per Section 5.5 of this procedure.

The 11 high risk chemicals of security concern are to be stored securely and not made accessible to the public.

All storage locations and the maximum quantity stored are to be entered on the Chemwatch manifest.

5.3.17 Hazardous Atmospheres

Where there is potential for risk to health and safety associated with a hazardous atmosphere, the person responsible for managing the physical process/task that creates the hazardous atmosphere must control the risks to health and safety.

An atmosphere is a hazardous atmosphere if:

- The atmosphere does not have a safe oxygen level; or
- The concentration of oxygen in the atmosphere increases the fire risk;
- The concentration of flammable gas, vapour, mist, or fumes exceeds 5% of the Lower Explosive Limit (LEL) for the gas, vapour, mist or fumes; or
- A Hazardous Chemical in the form of a combustible dust is present in a quantity and form that would result in a hazardous area.

5.3.18 Flammable or Combustible Substance Not to be Accumulated

Persons responsible for flammable or combustible substances are only to keep/store the lowest practicable quantity for the workplace.

5.3.19 Fire and Emergency Planning

The firefighting equipment provided in the workplace must be suitable for the quantity and nature of Hazardous Chemicals stored within the area.

On construction or renovation of a building the Estate Directorate is to coordinate an assessment to determine the emergency requirements for the location.

The Estate Directorate ensures that:

- Firefighting equipment is inspected and maintained.
- Records of the inspection and maintenance are retained at the Estate Directorate Office.

The building occupant is to contact the Estate Directorate if the use of a location will change, to determine if a review of emergency equipment is required.

5.3.20 Age of Person

Persons under the age of 16 are not to be provided with a Hazardous Chemical that is a flammable gas or flammable liquid.

5.3.21 Audit of Inventories

College Managers, College Deans and other relevant Managers are to ensure that the current Hazardous Chemical inventory and maximum storage quantities for which they are responsible are audited on an annual basis.

This actual audit should be performed by the personnel maintaining the manifests.

5.4 Requirements Applying only to Schedule 11 Hazardous Chemicals Substances

5.4.1 Schedule 11 Hazardous Chemicals Manifest

An up to date manifest of Schedule 11 Hazardous Chemicals ("Schedule 11 Manifest") must be kept where the quantity of chemicals exceed the manifest quantities listed in Table 10.1, Schedule 11, of the Work Health and Safety Regulation 2011.

A scale plan must be included that shows the location of:

- Containers and other storage of Hazardous Chemicals in bulk.
- Storage areas of packaged Hazardous Chemicals and intermediate bulk containers (IBCs).
- Main entrance and other places of entry to and exit from the workplace.
- Essential site services, including fire services and isolation points for fuel or power.
- Drains on site.
- Indication of true North.

The manifest must be kept at a location determined in agreement with the primary emergency services organisation. Unless specifically negotiated, otherwise a copy of the Schedule 11 Manifest will be kept at the main entry to the property/building in a signed Hazchem cabinet.

The Schedule 11 Manifest is to be maintained on the Chemwatch system as per Section 5.3.8.

Where a change has occurred in the quantities of a Schedule 11 Hazardous Chemical, which will result in a change to the Schedule 11 Manifest, an updated Schedule 11 Manifest is to be printed and placed in the Hazchem cabinet.

5.4.2 Schedule 11 Hazardous Chemicals Manifest Quantities Notification to Regulator

Where the quantity of Schedule 11 Hazardous Chemicals stored, exceed the manifest quantities listed in Table 10.1, Schedule 11, of the *Work Health and Safety Regulation 2011*, a notification is to be sent to WorkCover Queensland.

- “Form 73 – Notification of a manifest quantity” is to be completed and a copy of the current Schedule 11 Manifest sent with the form. The form can be accessed at www.worksafe.qld.gov.au.

Form 73 is to be submitted by the person responsible for the storage location (example, Laboratory Manager) in consultation with the JCU HSE Biological, Radiation, and Chemicals Safety Advisor. Typically the notification will be for the holdings of an entire building, independent of management structure or organizational lines.

Before quantities of a Schedule 11 Hazardous Chemical are established or increased, resulting in a change to the Schedule 11 Manifest for the location, the:

- College Manager or Dean must approve the increase and confirm that the increase in storage capacity is required. They must ensure that the Schedule 11 Hazardous Chemical will be stored as per the relevant standards for the class of chemicals. The approval and confirmation is to be in writing.
- The Form 73 is to be lodged in consultation with the JCU HSE Biological, Radiation, and Chemicals Safety Advisor.

When quantities of Schedule 11 Hazardous Chemicals decrease, resulting in a change to the Schedule 11 Manifest for the location, the HSE Biological, Radiation, and Chemicals Safety Advisor is to be notified that a new notification Form 73 will need to be lodged.

- The Form 73 is to be lodged in consultation with the JCU HSE Biological, Radiation, and Chemicals Safety Advisor.

Specific emergency plans are required where Schedule 11 Hazardous Chemicals exceed the manifest quantities listed in Table 10.1, Schedule 11, of the *Work Health and Safety Regulation 2011*. Emergency plans must take into account:

- Nature of the hazard.

- Effective response to an emergency.
- Evacuation procedures.
- Notification of emergency services.
- Medical treatment and assistance.
- Testing of the emergency procedures.

The person responsible for the storage of the Schedule 11 Hazardous Chemical that has exceeded manifest quantities must provide copies of the emergency plans to the JCU HSE Biological, Radiation, and Chemicals Safety Advisor to lodge with WorkCover Queensland.

Related Information	Form 73 – Notification of a manifest quantity
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5.4.3 Placards

Outer warning placards:

- Schedule 11 Hazardous Chemicals outer warning placards, are required where the total quantity of Schedule 11 Hazardous Chemicals or group of Schedule 11 Hazardous Chemicals, exceed the placard quantity listed in Table 10.1, Schedule 11, of the *Work Health and Safety Regulation 2011 (Qld)*.
 - This applies to all chemicals stored within a location, and is independent of JCU management structure or organizational lines.
 - As such the placard plan will need to consider all storages within the location.
- The outer warning placard must be red letters on white or silver background and consistent with Figure 1.



Figure 1: Outer Warning Placard

Information Placards:

- Information placards are placed at the location of storage and are dependent on the class of chemicals stored and the type of storage. Storage placards must be compliant with the guidance as set out in Schedule 13 of the *Work Health and Safety Regulation 2011 (Qld)*.
- The person with responsibility regarding the storing of the Schedule 11 Hazardous Chemicals shall determine placarding requirements.
- The information placard is to be:
 - Located as reasonably practicable to the main entrance of the building.

- Located on the entrance to each room or walled section of the building where the chemical is used, handled or stored.
 - If the container is external, then next to the container.
 - Clearly legible.
 - Separate from other distracting signage.
- The Chemwatch inventory can provide reports specific to the Schedule 11 Manifest being viewed to determine the chemicals that have exceeded information placard quantities.

5.4.4 Transport of Schedule 11 Hazardous Chemicals

Schedule 11 Hazardous Chemicals are to be transported in line with the:

- International Air Transport Association (IATA) Dangerous Goods Regulations for air transport.
- Australian Code for the Transport of Dangerous Goods by Road & Rail.
- International Maritime Dangerous Goods Code.

The person packaging the Schedule 11 Hazardous Chemicals and signing the consignment note will require shipping and packaging training.

5.4.5 Transport of Schedule 11 (Field Samples Containing Flammable Liquids) Hazardous Chemicals, Exempt Quantity Transport by Air

Where small amounts of flammable liquid such as ethanol are used to preserve samples and will be transported by air, the excepted quantities guidelines of section 2.7 of the IATA Dangerous Goods Regulations are to be followed. The parcel is to be packed and marked as per Section 2.7 of the IATA Dangerous Goods Regulations.

These packages cannot be placed within checked-in baggage or carried onto the plane.

- The parcel is to be checked in separately.

Flammable liquids that may be used include:

- Ethanol
- Ethyl alcohol
- Formaldehyde
- Alcohol
- Isopropanol

5.5 Requirements Applying only to Schedule 10 Prohibited and Restricted Carcinogens

5.5.1 Procurement of Schedule 10 Prohibited and Restricted Carcinogens

- Schedule 10 of the *Work Health & Safety Regulation 2011 (Qld)* lists chemicals that are Schedule 10 Prohibited or Restricted Carcinogens. These chemicals will only be approved for use at JCU campuses and sites where there is a genuine requirement for analysis or research.

- The responsible supervisor and Dean of College must be consulted and have given approval prior to starting the process of obtaining a Schedule 10 Prohibited or Restricted Carcinogen.
- The HSE Biological, Radiation, and Chemicals Safety Advisor is to be notified of the carcinogen to maintain a register of approvals.
 - Copies of the risk management procedure and permit from the regulator are to be provided.
- In order to possess a Schedule 10 Prohibited or Restricted Carcinogen a “Form 74 – Application for authorisation to use, handle or store prohibited or restricted carcinogens” must first be completed and approved by Workplace Health & Safety Queensland.
 - A separate application is required for each Schedule 10 Prohibited or Restricted Carcinogen.
 - The form and supporting documents can be:
 - Emailed to hicb@justice.qld.gov.au
 - Or posted to Health and Hygiene Unit, HICB, Workplace Health and Safety Queensland, PO Box 820, Lutwyche Qld 4030.
- A risk management procedure is to be supplied with the completed Form 74. The risk management procedure will need to contain:
 - Hazard identification
 - Risk control
 - Why the chemical must be used
 - Storage details
 - Process description
 - Control measures to prevent exposure
 - Maintenance and testing procedures for control measures
 - Atmospheric monitoring
 - Biological monitoring
 - Health surveillance program
 - Spill and emergency procedures
 - Employee training and information
 - Decontamination and waste disposal
- A copy of the approval will need to be provided to the supplier to obtain the chemical.

Form	Form 74 – Application for authorisation to use, handle or store prohibited or restricted carcinogens
Register	Register of JCU Prohibited or Restricted Carcinogens
Letter	Statement of Exposure (Restricted & Prohibited Carcinogen)

5.5.2 Use of Schedule 10 Prohibited or Restricted Carcinogens

- The Schedule 10 Prohibited or Restricted Carcinogen is to be stored, used and disposed of as per the risk management procedures.
- A statement of exposure is to be provided to a worker at the end of the worker’s engagement. This statement is to include:

- Name of the Schedule 10 Prohibited or Restricted Carcinogen to which the worker may have been exposed.
- The time period the worker may have been exposed.
- How and where the worker may obtain records of the possible exposure.
- Medical advice, whether the worker should undertake regular health assessments, and the relevant tests to undertake.

5.5.3 Records of Schedule 10 Prohibited or Restricted Carcinogens

- A record must be maintained of the full name, date of birth and address of each worker likely to be exposed to the prohibited carcinogen or restricted carcinogen at the workplace.
- Consent must be provided by each person that their personal information can be retained.
- Keep a copy of each authorisation given to the person including any conditions imposed on the authorisation.
- The record must be kept for 30 years.

5.6 Requirements Applying only to Chemicals of Security Concern

Chemicals of security concern are identified in the “National Code of Practice for Chemicals of Security Concern” as per Table 2.

There are:

- 11 chemical precursors to homemade explosives to which the *National Code of Practice for Chemicals of Security Concern* applies as identified in Table 2.
- There are 96 other chemicals of security concern where the *National Code of Practice for Chemicals of Security Concern* should be considered.

Table 2: 11 High Risk Chemicals of Security Concern

Chemical	Concentration
Ammonium perchlorate	a) In a water-based solution containing 10% or higher of ammonium perchlorate; or b) In a form other than a water-based solution, at a concentration of 65% or higher
Hydrogen peroxide	a) In a water-based solution at any concentration; or b) In a form other than a water-based solution, at a concentration of 15% or higher
Nitric acid	At a concentration of 30% or higher
Nitromethane	At a concentration of 10% or higher
Potassium chlorate	a) In a water-based solution containing 10% or higher of potassium chlorate; or b) In a form other than a water-based solution, at a

	concentration of 65% or higher
Potassium nitrate	a) In a water-based solution containing 10% or higher of potassium nitrate; or b) In a form other than a water-based solution, at a concentration of 65% or higher
Potassium perchlorate	a) In a water-based solution containing 10% or higher of potassium perchlorate; or b) In a form other than a water-based solution, at a concentration of 65% or higher
Sodium azide	At a concentration of 95% or higher
Sodium chlorate	a) In a water-based solution containing 10% or higher of sodium chlorate; or b) In a form other than a water-based solution, at a concentration of 65% or higher
Sodium perchlorate	a) In a water-based solution containing 10% or higher of sodium perchlorate; or b) In a form other than a water-based solution, at a concentration of 65% or higher
Sodium nitrate	a) In a water-based solution containing 10% or higher of sodium nitrate; or b) In a form other than a water-based solution, at a concentration of 65% or higher

All suspicious incidents and security breaches should be investigated and reported to the national security hotline on 1800 1234 00.

Where these chemicals are to be used, a risk assessment and self-assessment will need to be conducted that determines the most appropriate measures to reduce the risk of terrorists acquiring chemicals.

These substances must be purchased on purchase order.

Consider the following controls:

- Limiting access and secure storage of chemicals.
- Proof of identify when substances are collected.
- Stocktaking and accounting for inventories.
- Stock level to be kept to the smallest quantity practical.

5.7 Requirements Applying only to Illicit Drug Manufacture and Drug Misuse

The requirements to manage substances and apparatus that could be used for illicit drug manufacture are identified within:

- Schedule 6 of the *Drugs Misuse Regulation 1987 (Qld)* which places requirements on the supplier of:
 - substances identified in Schedule 6; and
 - Apparatus identified in 8B.
- The *Code of Practice for Supply Diversion into illicit Drug Manufacture* which is an industry code.

The legislation requires that suppliers obtain End User Declaration for these items. This is the supplier's responsibility.

These substances and apparatus must be purchased on purchase order.

The JCU My Requisition System records the name and location of supply for the substance and apparatus to track where these items have been distributed within JCU.

When distributing any of these items internally at JCU, the person dispensing the stock must satisfy them self to the identity of the recipient; this includes asking for photographic identification.

6 Related Documents, Legislation and Other Resources

6.1 Related Documents and Other Resources

	HSE Policy	
Application	Form 73 – Notification of a manifest quantity	
Register	Chem Watch Manifest Access Structure	
Form	HSE20: JCU Hazardous Chemical Risk Assessment Form	
Form	HSE20: JCU	
Application	Form 74 – Application for authorisation to use, handle or store prohibited or restricted carcinogens	
Register	Register of JCU Prohibited or Restricted Carcinogens	HSE020-REG-002
Form	Statement of Exposure (Restricted & Prohibited Carcinogen)	
Government	National Industrial Chemicals Notification and Assessment Scheme	

6.2 Regulatory Authorities and Other Relevant Entities

Division of Workplace Health & Safety Queensland

6.3 Related Legislation, Codes of Practice and Standards

Legislation	Work Health and Safety Act 2011 (Qld) Work Health and Safety Regulation 2011 (Qld)
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Codes of Practice	Managing Risks of Hazardous Chemicals in the Workplace Code of Practice National Code of Practice for Chemicals of Security Concern
Standards	<p>AS/NZS 2243.10 - Safety in Laboratories – Part 10: Storage of Chemicals</p> <p>AS 4332 - The storage and handling of gases in cylinders.</p> <p>AS/NZS 1596 - LP gas - Storage and handling.</p> <p>AS 1894 - The storage and handling of non-flammable cryogenic and refrigerated liquids.</p> <p>AS/NZS 2927 - The storage and handling of liquefied chlorine gas.</p> <p>AS 1940 - The storage and handling of flammable and combustible liquids.</p> <p>AS 4326 - The storage and handling of oxidising agents.</p> <p>AS 2714 - Storage and handling of hazardous chemical materials – Class 5.2 substances.</p> <p>AS/NZS 4452 - The storage and handling of toxic substances</p> <p>AS 2507 - The storage and handling of agricultural and veterinary chemicals.</p> <p>AS 3780 - The storage and handling of corrosive substances.</p> <p>AS/NZS 3833 - The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers.</p> <p>AS/NZS 4681 - The storage and handling of miscellaneous (class 9) dangerous goods and articles</p> <p>AS 3961 - The storage and handling of liquefied natural gas</p>

7 Administration

NOTE: Printed copies of this procedure are uncontrolled, and currency can only be assured at the time of printing.

7.1 Approval Details

HSE-PRO-005 Procedure Sponsor	Head, Health, Safety and Environment responsible for development, compliance monitoring and review
Approval Authority	DVC Services and Resources
Consultation Committee	HSE Unit, HSEAC Sub Committees and Divisional HSE Committees
Approval date	23/10/2015
Implementation date	23/10/2015
Date for next review	24/10/2017

Contact Unit	safety@jcu.edu.au
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7.2 Revision History

Version	Date Amended	Description of changes	Author
1.0	23/10/2015	Procedure established	HSE

Keywords	
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7.3 Appendix 1

Hazardous Chemicals Overview

