GRIFFITH UNIVERSITY

Procedure

Risk Assessing Chemicals

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1.0 Purpose

This procedure outlines the requirements for risk assessing the work processes associated with chemicals at Griffith University. The procedure aims to minimise risks to personnel and property and ensure continuing legislative compliance.

2.0 Scope

This procedure applies to all staff, students, contractors, and other relevant persons engaged by Griffith University that procure, use, store and dispose of chemicals as part of their work, research, or study. It encompasses all aspects of chemicals management, except for managing asbestos, biological or radioactive materials (refer to specific procedures for these hazards).

3.0 Procedure

3.1 Determining when a Risk Assessment is Required

Chemical Custodians must

Before using chemicals, conduct a risk assessment for work to be undertaken involving chemicals.

The risk assessment includes assessing the hazards and risks associated with:

- use
- storage
- disposal
- emergency response, and
- where applicable, security and transport.

Before conducting the risk assessment:

1. Assess whether the chemical is required by reviewing the work activity and/or current practice, and
2. If elimination is impossible, evaluate the possibility of substituting the chemical with another less hazardous chemical.

Where limited information is available for an accurate risk assessment of a chemical, such as nanomaterials, a precautionary approach should be taken to manage the chemical.

Where possible, consult with any workers that may have their health affected by a chemical during a chemical risk assessment.

Review the Risk Assessment:

- every 2 years at a minimum
- when new information on the risks is obtained or aspects of the use or work activity change
- when the results from an individual's health monitoring activity identifies that a person has elevated metabolites from exposure to a hazardous chemical, or has contracted a disease, injury or illness from exposure to a hazardous chemical
- when air monitoring indicates that the relevant workplace exposure standard has been exceeded
- after an incident or near hit
- when the risk assessment team identifies a shorter frequency of review is appropriate.

3.2 Identifying the Chemical Classification and Categorisation

Chemical Custodians must

Refer to the Acquiring and Transferring in Chemicals Procedure for instruction on identifying the chemical class and category. This activity will assist with determining which of the following controls are appropriate.

3.3 Defining the Context, Scope and Criteria

Chemical Custodians must

When describing the task define the context, scope, and criteria; include the following information:

- the nature of work to be carried out as well as the experience of the participants with handling this chemical
- concentration and the hazardous properties of all chemicals to be used in the process
- if an exposure standard for the chemical exists
- potential exposure to workers including routes of exposure, frequency, and duration
- permits or licence requirements
- any importation requirements and ongoing conditions.

3.4 Identifying Risks

Chemical Custodians must

When conducting the risk assessment, ensure that the following hazards are included when applicable:

- specific hazards of the chemical including time sensitivity – the Safety Data Sheet (SDS) provides information on the hazards of the chemical.
- other chemicals that are incompatible
- ignition sources
- hazardous atmospheres

- any structure, plant, system of work that could interact with a chemical
- environmental impacts
- any other hazards known to the risk assessment team

3.4.1 Working in Hazardous Areas

Laboratory Managers, Clinic Managers, Workshop Managers must ensure that work areas manage hazardous areas/zones.

The WHS regulation defines a hazardous area as an area in which:

- explosive gas is present in the atmosphere in a quantity that requires special precautions to be taken for the construction, installation, and use of plant, or
- combustible dust is present, or could reasonably be expected to be present, in the atmosphere in a quantity that requires special precautions to be taken for the construction and use of plant.

Wherever flammable liquids, vapours, gases and combustible dusts are used, stored, handled or generated, assess the hazardous area classification to determine the risk of fire and explosion.

Further information is available in the Electrical Safety Procedure and the Working With Flammable Dusts, Vapours, and Powders Guideline.

Contact crs@griffith.edu.au for guidance on this process.

3.5 Analysing and Evaluating Risks

Chemical Custodians must

Analyse the risk assessment to assess whether existing controls are sufficient to reduce the risk to as low as is reasonably practicable.

Evaluate which risks require further action and establish additional controls to treat the risk.

3.5.1 Schedule 14 Hazardous Chemicals

Chemical Custodians must

Address the hazards and risks associated with work involving chemicals defined in Schedule 14 of the WHS regulation, and specifically analyse whether the chemical poses a significant risk.

Any work involving schedule 14 chemicals must adhere to the Health Monitoring Standard and the Health Monitoring Procedure.

In deciding if the risk is significant, consider:

- the nature and severity of the hazard for each chemical, taking into account:
  - the current GHS7 classification
  - the form of the chemical in the workplace processes
  - the route of entry by which the chemical can adversely affect health
- the degree of exposure to workers, taking into account:
  - where in the workplace the chemicals are used, handled, stored or generated, and

- who could be exposed, and at what levels or concentrations exposure could occur.

If the risk is assessed as significant, contact crs@griffith.edu.au to identify health monitoring controls.

3.6 Treating the Risk

Chemical Custodians must

Include control measures in the risk assessment for the use, storage, waste, and disposal of chemicals, including cryogens and nanomaterials, as well as those generated as by-products or waste, and ensure controls are implemented. Additionally, controls for the security of the following chemicals must be included:

- scheduled medicines and poisons
- prohibited or restricted carcinogens
- controlled substances
- chemicals of security concern.

Refer to the SDS for guidance on minimum controls and prioritise the controls in accordance with the Hierarchy of Control. Specific consideration must be given to:

- training requirements for users
- segregation and separation during storage
- engineering controls such as ventilation systems, atmospheric monitoring, security locking mechanisms, storage cabinets etc.
- personal protective equipment for users
- emergency response (including antidotes and spill kits), extrication and evacuation controls
- requirements for chemicals requiring health monitoring
- waste disposal appropriate for the environmental impacts.

When using cryogens or cryogenic liquids, refer to your local Handling Cryogens or Cryogenic Liquids procedure for guidance on specific controls.

3.6.1 Disposal

Chemical Custodians must

Identify any legislative requirements for the disposal of chemicals.

Contact crs@griffith.edu.au for assistance with this.

3.6.2 Storage

Chemical Custodians must

Consider the following storage controls:

- storage shelves should be level, secure, of a reasonable depth (not too shallow or deep) and never overloaded
- shelving material should be compatible with the goods to be stored

- shelves with a lip are the preferred option, so containers do not protrude over the edge of the shelf or fall
- chemicals may only be kept on the floor in a lab if bunded, not in a walkway, and positioned to not interfere with users
- do not store chemicals on shelves higher than 1.5m in open storage in accordance with AS/NZS 2243.2:2021 Safety in laboratories
- liquids should be stored as low as possible to reduce the risk of breakage and spillage
- materials that react with water should not be stored in areas where they may encounter water e.g. under a sink or on a shelf with aqueous solutions.
- The storage of chemicals in purpose built chemical stores will conform to the relevant standards, e.g. flammable stores conform to AS 1940:2017

3.6.3 Fume Cupboards and Glove Boxes

Chemical Custodians must

Consider fume and glove boxes when work involves:

- volatile chemicals
- solvents
- fume-generating activities
- powders
- reactions in open processes
- chemicals that react with air or moisture

If including fume cupboards, they must:

- be ducted
- be appropriate for the type of chemicals used
- have clear labelling which notifies users of what work is permissible in the fume cupboard (e.g. for general chemical work or perchloric or hydrofluoric acid work)
- be installed, maintained and operated in line with the requirements of applicable Australian Standards
- never be used for the storage of chemicals.

3.6.4 Sensors, Detectors and Alarms

Chemical Custodians must

Review what controls are currently in the designated workplace.

Consult with the Campus Life Engineering Team and the Chemical Safety Manager when determining what type and location of detectors, sensors or alarms are appropriate for the chemical to be used.

3.6.5 Emergency Preparedness

Chemical Custodians must

Consider the following emergency preparedness controls:

- general first aid requirements and allocation of appropriately trained first aiders
- location and access to emergency showers and emergency eyewash stations
- specific first aid requirements for some chemicals (e.g. cyanide requires administration of oxygen, antidotes for poisons)
- spill kits appropriate for the physical properties of the chemical/s in the area
- additional equipment to mitigate or reduce environmental impact (e.g. bunding or the ability to isolate floor drains and sinks)
- firefighting equipment appropriate for the physical properties of the chemical/s in the area
- breathing apparatus or respirators
- environmental or atmospheric monitoring devices.

At a minimum, chemical work must only be carried out in a laboratory or workshop that includes emergency showers and eye wash stations that conform to AS 4775-2007. Appropriate fire extinguishers must also be available in spaces that contain flammable chemicals.

Refer to the Managing Chemical Incidents and Emergencies protocols for guidance on specific responses.

3.6.6 Training

Chemical Custodians must

Consider the following to be incorporated to training:

- specific emergency controls
- gas cylinder safety
- containment facilities
- Chemwatch
- Personal Protective Equipment.

3.6.7 Personal Protective Equipment (PPE)

Chemical Custodians must

Include the following minimum PPE for all chemical use:

- enclosed shoes made of non-absorbent material with a non-slip sole
- appropriate eye protection when decanting, pouring or mixing chemicals. Select goggles or glasses.
- gloves that are appropriate for the chemical being handled, you must specify the glove material.
- for laboratories:
  - laboratory coats or overalls made of a fire-retardant material,
  - natural fibres, **or**
  - a laboratory gown for laboratory work

- for welding workshops, protective clothing of fire-retardant material.

All PPE must conform to the relevant Australian Standards.

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.

4.0 Definitions

ADG Code is the *Australian Code for the Transport of Dangerous Goods by Road and Rail*, in its current form, approved by the Australian Transport Council. The ADG Code is accessible at the National Transport Commission website.

Chemicals are any substance that has a defined composition.

Chemical Custodians are personnel with operational control over chemicals at Griffith. This includes users of the chemicals, chief investigators and their supervisor.

GHS refers to the 'Globally Harmonized System of Classification and Labelling of Chemicals', in its current form and published by the United Nations.

Hazardous Chemical means a substance, mixture or article that satisfies the criteria for a hazard class in the GHS (including a classification referred to in Schedule 6 of the WHS Regulation).

Label means written, printed or graphical information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the container of a hazardous chemical.

Nanomaterials refer to industrial materials intentionally produced, manufactured or engineered to have unique properties or specific composition at the nanoscale, that is a size range typically between 1 nm and 100 nm, and is either a nano-object (ie. that is confined in one, two, or three dimensions at the nanoscale) or is nanostructured (ie. having an internal or surface structure at the nanoscale).

SDS refers to a safety data sheet prepared under Section 330 or 331 of the WHS Regulation.

WHS Regulation refers to the *Work Health and Safety Regulation 2011* (Qld)

5.0 Information

Title	Risk Assessing Chemicals Procedure
Document number	2025/0001097
Purpose	This procedure outlines the requirements risk assessing the work processes associated with chemicals at Griffith University. The procedure

	aims to minimise risks to personnel and property and ensure continuing legislative compliance.
Audience	Staff
Category	Operational
Subcategory	Safety
UN Sustainable Development Goals (SDGs)	This document aligns with Sustainable Development Goal: 3: Good Health and Well-Being
Approval date	4 September 2025
Effective date	4 September 2025
Review date	2028
Policy advisor	Senior Manager, Chemical Safety
Approving authority	Director, Health and Safety

6.0 Related Policy Documents and Supporting Documents

Legislation	Work Health and Safety Act 2011 (Qld) Work Health and Safety Regulation 2011 (Qld) Australian Dangerous Goods (ADG) Code Medicines and Poisons Act 2019 (Qld) Medicines & Poisons (Poisons & Prohibited Substances) Regulation 2021 (Qld) Therapeutic Goods (Poisons Standard—July 2023) Instrument 2023 (Cwlth) National Code of Practice for Chemicals of Security Concern 2016 (Cwlth)
Policy	Health, Safety and Wellbeing Policy

Procedures	Managing Chemicals Standard Acquiring and Transferring in Chemicals Procedure Maintaining a Chemical Inventory Procedure Handling, Using and Disposing of Chemicals Procedure Transporting Chemicals Procedure Managing Regulated Chemicals Procedure Special Approvers Guideline Griffith University Substance Management Plan
Local Protocol	N/A
Forms	N/A