Chemical Management Procedure

Section 1 - Overview

(1) ACU is committed to maintaining and continuously improving its Work Health and Safety Management System (WHSMS or framework) and managing its significant WHS risks, including the risks which are associated with hazardous chemicals.

(2) Some of the ways that these WHS and governance risks are managed, include:

a. Maintaining chemical registers

   Chemical registers should be maintained, inclusive of SDS libraries, within Chemwatch (a chemical hazard information and risk assessment service) and in a hard copy format.

b. Applying safe work practices

   Staff members, including laboratory technicians, who handle chemicals should apply safe work practices and be competent in risk assessment and the management of risks, and should be appropriately trained, instructed and supervised. Any users of these chemicals, including students, should also be instructed about safe work practices and have ready access to the chemical registers, including relevant SDS, and safe work instructions which are maintained by organisational units.

c. Conducting WHS Inspections of laboratories and other work areas

   Organisational units using chemicals, classified as either hazardous or dangerous goods, must also undertake regular WHS inspections and WHS risk assessments of chemical inventories to ensure that hazards and risks are identified and managed.

d. Planning purchases

   Organisational units should plan their purchases of chemicals to ensure that they both meet requirements and minimise any disposal costs which may be associated with either chemicals that are no longer needed or have expired.

e. Labelling chemicals

   Other compliance requirements include ensuring that chemicals within the original and subsequent containers used are correctly labelled. These labels can be sourced via the Chemwatch database.

f. Managing storage risks

   Chemicals should also be used and stored safely to ensure that compatible chemicals are stored together, flammable or corrosive cabinets are used, and standard refrigerators are not used for flammable liquids.

g. Considering other requirements

   Larger storage areas that are holding dangerous goods in significant quantities must contain placards (above 50-100 kilograms or litres) and the relevant State WHS regulator should be notified if ACU is holding more between 500-10,000 kilograms or litres of these goods on one of its sites. Additionally, manifest reports will also

be produced whenever ACU holds quantities of dangerous goods that exceed threshold levels. Appropriate spill containment equipment should be available to support organisational units should be prepared to effectively respond to emergencies. More detailed procedures are outlined in Section 2 to 16.

Section 2 - Training

Inductions

(3) Staff members, students, visitors, volunteers and contractors that enter, work, or learn within teaching laboratories, chemical storage and preparation areas should be appropriately inducted into these areas to ensure that they are committed to applying emergency response procedures, identifying and managing risks, submitting reports of incidents, injuries, and hazards within Riskware; and contribute to the maintenance of the WHSMS and safe working and learning spaces.

Chemical Management Training

(4) Training should be provided to laboratory and relevant facilities management or other staff members, which provides guidance about safe work practices that are associated with using, storing and disposing of hazardous chemicals and dangerous goods, legislative requirements, the use of the Chemwatch database, chemical registers (including SDS libraries), labelling requirements, the ACU WHS risk management methodology and emergency responses. Staff and students (and where relevant contractors and visitors) should also be trained in waste management and should be competent in spill containment.

Task	Trainees	When	Action Owner	Senior Management/Management[1]
Provide a laboratory induction to students, delivered online and/or 'face-to-face'	Students	When first exposed to teaching laboratories	Teaching Staff/Research Supervisor	Oversight
Laboratory Induction	Contractors/ Subcontractors	When first exposed to a laboratory or chemical storage area	Facilities Management (FM) staff to coordinate with Laboratory Staff	
Laboratory Induction	Staff members	When first exposed to the laboratory environment	Nominated Supervisor/ Manager	
Maintain records of the training delivered	Students and staff	Whenever training is conducted	Teaching Staff or Laboratory Supervisor/ Manager	Oversight
Co-ordinate the delivery of chemical management training	Staff members	Refresher training, which is scheduled at least every twelve months or whenever there are either changes in the workplace legislative requirements	Nominated Supervisor/ Manager	Allocate Budget and provide oversight

[1] Examples of Senior Management or Management roles include positions such as National Head of

School, Deputy Head of School and Research Institute Heads of Centres.

Section 3 - Supervision

(5) Nominated Supervisors / Managers and teaching staff members are also responsible for ensuring that working and learning areas are safe from chemical exposures or dangerous goods risks. They should also plan for emergencies.

Task	When	Action Owner	Senior Management/Management
Supervision of staff to ensure that: • Safety Data Sheets (SDS), including one mini SDS, and safe work instructions are readily accessible and complied with; • Personal Protective Equipment (PPE) is worn, when required; • Emergency responses are effective, including providing the right spill control equipment; • WHS risk assessments are conducted regularly (Refer to Section 7) and complied with and • Staff members comply with chemical management regulations.	Ongoing	Nominated Supervisor / Manager	Oversight
Ensure that students have access to and are familiar with the relevant SDS and safe work instructions for any chemical that is used, they are adequately supervised, and they are familiar with emergency response procedures.	Ongoing	Teaching Staff	
Ensure that students are avoiding the consumption of food and drinks in laboratories and preparation areas.	Ongoing	Staff, including Teaching and Laboratory Staff	
Ensure that visitors, including tradespeople, are appropriately supervised and are familiar with chemical hazards.	Ongoing	Relevant Technical / Laboratory Staff in consultation with Local Facilities Manager or Delegate	Oversight

Section 4 - WHS Risk Assessments

(6) WHS risk assessments should be conducted to assess the hazards and risks which are associated with hazardous chemical, including Australian Dangerous Goods. Risk assessments should be conducted whenever organisational units are proposing to purchase or use new chemicals, in the planning phases of teaching development or research projects, and prior to setting up new chemical storage areas. Risk assessments should also be conducted to improve emergency response planning. Risk management reviews should also be scheduled every six months, within high risk environments such as laboratories, and to review hazards and risks, and the effectiveness of treatments (risk controls).

(7) WHS risk assessments are not required whenever hazards and associated risks are well known and can either be easily resolved or effective treatments are being applied.

No.	Task	When	Responsibility	Senior Management/Management
1	Schedule a risk assessment to assess whether staff members, students, contractors or visitors could be potentially exposed to health and dangerous goods hazards and risks. Note: Consider conducting a generic risk assessment if you are assessing hazardous chemicals that are identical in characteristics, properties, potential hazards and risks (which will be used in the same way).	Refer to the paragraph above.	Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff (in consultation with Nominated Supervisor / Manager)	Ensure that relevant risks are assessed and managed.
2	Are you conducting a WHS risk assessment for a single chemical? • YES: One or two WHS risk assessments should be conducted, using Chemwatch (conducting separate assessments for health and dangerous goods risks). This assessment should be conducted in consultation with anyone that will apply treatments and/or is familiar with any work processes that are being assessed for hazards and risks. Proceed to Step 3. • NO: I am either assessing: ◦ Hazards and risks associated with practical activities or a research project (use the ACU WHS Risk Assessment Form) ◦ An entire mixing process (if you are not using the Chemwatch Credo Module), categories of dangerous goods, storage risks, emergency responses or other more complex assessments (use the ACU WHS Risk Assessment Form). Proceed to Step 2.1.	Whenever risk assessments are conducted	Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff (in consultation with Nominated Supervisor / Manager)	
2.1	Start to conduct the WHS risk assessment in consultation within anyone that is familiar with the work processes, is a subject matter specialist or will apply treatments in laboratories or teaching spaces or within work processes.	Whenever risk assessments are conducted that either: • assess an entire mixing process; • support the development of new course content that will be applied in teaching laboratories; • involves the use of chemicals in a research project; and • support the use of chemicals for a work process.	Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	

No.	Task	When	Responsibility	Senior Management/Management
2.2	Begin to assess hazards by reviewing the label and SDS of the hazardous chemicals and/or dangerous goods, and other relevant reference materials, and assess the hazards associated with their use, storage and disposal. Assess: who could be exposed to immediate (dangerous goods) or longer-term hazard(s) and risk(s), hazard severity and level of potential exposure(s), and the sources or processes that contribute to the safety or environmental risk(s), and document this assessment (using a WHS Risk Assessment Form).		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	
2.3	Assess the risk rating (based on applying any applicable, existing treatments to the management of the risk/s) which may be applied to this or other chemical substances. Use the risk rating table within Appendix A of one of ACU's WHS Risk Assessment Forms. Is the Risk Level Acceptable (Ideally equal to / less than Moderate (3)? • YES: Proceed to 2.5. • NO: Proceed to 4.		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	
2.4	Develop Treatments (risk controls) to Manage Risks (Referring to Guidance about Using Chemicals and WHS Risk Assessments and the Development of Treatments for Guidance). Apply the Hierarchy of Risk Control in WHS Risk Assessments and the Development of Treatments when treatments are chosen; higher level treatments (risk controls) should be used to manage higher level risks. Also, continue to engage other staff, students or contractors about the choice of these treatments that will be applied in working and learning areas.		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	
2.5	Reassess the risk rating, using the risk rating table, which is referenced from Appendix A of the WHS Risk Assessment Form.		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	
2.6	Has the risk rating been reduced to a level of Moderate (3) or below? • YES: Proceed to 2.8. • NO: Proceed to 2.9.		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	
2.7	Coordinate the 'sign off' of the WHS risk assessment and the treatments (risk controls) and ensure that relevant Teaching Staff endorse any treatments that will be applied within teaching facilities.		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff (Authorised by Nominated Supervisor / Manager and / or Relevant Teaching Staff).	

No.	Task	When	Responsibility	Senior Management/Management
2.8	Submit a detailed risk assessment plan, for 'sign off', which outlines a range of controls that reduce the risk rating down to Moderate 3 or below.		Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff	Authorise
3	Develop safe work instructions or higher-level treatments (supported with training and verbal instruction) that will be applied by everyone, including teaching staff, who will handle or manage the chemical, or mixing process.	If treatments are needed to handle / manage the product	Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff (Overseen by Nominated Supervisor / Manager)	
4	Review whether all significant risks have been identified and the effectiveness of existing treatments,	Every Six Months	Staff Members, including Relevant Technical / Laboratory, Research and Teaching Staff (Overseen by Nominated Supervisor / Manager)	Oversight

Section 5 - WHS Inspections

(8) Staff members should regularly inspect chemical storage areas, at least every three to six months, to verify that hazards and risks are being managed.

(9) These WHS inspections will support organisational units to identify that these and other hazards are being managed:

a. Chemicals are not being stored above eye height;
b. All labels are legible and applied to all containers;
c. Emergency evacuation procedures and contact lists are accessible and up to date;
d. Chemical registers are truly reflective of all chemicals held;
e. Safe manual handling practices are applied within these areas; and
f. Chemical storage containers, shelves and cabinets are free of signs of deterioration.

(10) These WHS inspections should also identify whether chemicals are in a stable condition, including ensuring that they are stored in an appropriate solution and which chemicals that should be disposed of.

Task	When	Action Owner	Senior Management/Management
Ongoing inspection of facilities during regular work procedures, including ensuring that these areas are returned to normal after practical activities.	Ongoing	Staff, including Relevant Technical / Laboratory Staff	Oversight
Conduct formal WHS Inspections of laboratories, using the WHS Inspection Checklist for Laboratories or a relevant checklist, and associated storage areas.	At least every three to six months	Staff, including Relevant Technical / Laboratory Staff	Oversight

(11) Access the WHS Inspection Checklist for Laboratories.

Section 6 - Maintaining Chemical Registers

(12) WHS and dangerous goods regulations outline requirements for maintaining chemical registers. These registers must be reflective of all chemicals which are held and classified as either hazardous and/or dangerous goods. The hard and soft copy registers, including SDS libraries, and any associated safe work instructions should also be readily accessible to staff, students and other people that manage or handle chemicals.

(13) Each organisational unit is required to apply a standard naming convention to the folders that they maintain within Chemwatch to support the development of manifest folders, which detail the maximum volumes of hazardous chemicals and Australian Dangerous Goods, which are stored at each site and within specific rooms or storage areas.

Naming Convention

a. Parent folder: Insert the name of the campus location and organisational unit e.g. North Sydney – Arts Sub-folder: Name of Building and Floor e.g. James Carroll Building Level 2
    i. Sub-folder: Name of Room e.g. 2.3
        - Sub-location folder: Name of storage space within room e.g. Corrosives Cabinet

Reviewing Chemical Registers

Step	Task	When	Action Owner	Senior Management/Management
1	Review chemical registers, both 'hard copy' and Chemwatch versions, to ensure that they are reflective of all chemicals held.	Every six months	Staff, including Relevant Technical / Laboratory Staff (Overseen by Nominated Supervisor / Manager)	Oversight
2	Submit a brief report to your nominated Supervisor / Manager to confirm that the review of the register has been completed on Chemwatch and hard copy registers have been updated.	Every six months	Staff, including Relevant Technical / Laboratory Staff	Oversight

(14) Chemical inventories are maintained within the manifest section of Chemwatch. These parent folders, for each organisational area that holds chemical inventories, are located below the campus name within the Chemwatch file directory. Section 7 – Site Manifests, provides guidance on the University's convention for the storage of records.

Section 7 - Site Manifests

(15) A manifest will be prepared when the quantity of dangerous goods on a site exceeds the quantities listed in WHS regulations, which will shape the notifications that are made to WHS regulators in the applicable state. These manifests will guide emergency services to ensure that they can respond effectively to any potential chemical emergency.

Manifest Requirements

Step	Task	When	Action Owner	Senior Management/Management
1	Review chemical inventories, managed on Chemwatch, to ensure that the inventory listing of chemicals, including Australian Dangerous Goods (ADG), are accurate.	15 January and 15 June (closest working day after this date)	Laboratory and Local Facilities Management Staff	Oversight
2	Provide site plans, detailing specific room numbers of ACU managed properties which have been recently acquired.	Mid-June and January	Local Facilities Manager or Delegate	
3	Produce a Chemwatch manifest report that details the maximum volumes of dangerous goods which are held by ADG Class or Category, within each room and the total volumes at each ACU managed site which exceed the thresholds for producing Manifest reports.	Every six months (1 July and 1 February)	WHS Staff, HR	
4	Update the manifest reports that are stored in Hazmat boxes within ACU managed buildings.	Every six months (1 July and 1 February)	WHS Staff, HR in Consultation with Local FM or Delegate	
5	Update Building Managers, overseeing properties that are not managed by ACU, about any changes in either classes (ADG) of dangerous goods held or volumes.	Every six months (1 July and 1 February)	Local Facilities Manager or Delegate	Oversight
6a	Contact Emergency Services with an update about any changes in volumes of classes of dangerous goods that are held on each sit, which exceed the 'Manifest Level' and site contacts.	Every six months (1 July and 1 February)	Local Facilities Manager or Delegate	Oversight
6b	Contact local WHS regulators with an update about the changes in volumes of dangerous goods that are held which exceed 'Manifest Level'.	Every six months (1 July and 1 February)	WHS Staff (HR)	
7	Ensure that Hazmat boxes are installed whenever ACU takes on the management of a new site.	Ongoing	Local Facilities Manager or Delegate	Oversight

Section 8 - Managing Hazards in Chemical Storage Areas

(16) Some of the safety considerations that should be applied in chemical storage areas include: Avoid potential spills by ensuring that oils are not stored in dropper bottles (A safer alternative is to use schott or nalgene bottles and ensure these containers are labelled).

a. Do not store chemicals above eye height;
b. Apply caution when you are moving chemicals and assess the risks associated with handling and moving these chemicals (See Section 4 – WHS Risk Assessments); and
c. Return chemicals promptly to storage rooms after they have been used.

(17) Refer to Guidance about Using Chemicals for more guidance about safe management practices within chemical storage areas.

Section 9 - The Purchasing Process and Inventory Updates, Chemical Registers

(18) WHS considerations should be integrated into the purchasing process. WHS risk assessments should also be completed prior to purchasing some chemicals as this process will shape the controls that are developed to manage chemicals. Safety equipment and additional storage equipment may need to be acquired prior to the delivery of some chemicals.

Step	Task	When	Action Owner	Senior Management/Management
1	Are you replacing chemicals that you currently use? • YES: Go to Step 9. • NO: Go to Step 2.	Pre-purchase	Staff, incl. Relevant Technical or Laboratory Staff (Authorised by Nominated Supervisor / Manager)	
2	Do the chemicals that you propose to purchase have: • Specific licensing, notification or additional security requirements; • A classification of a restricted or prohibited substances; • Air monitoring requirements or health surveillance requirements; or • Requirements for additional door signage or building placard requirements. ◦ YES: Proceed to Step 3. ◦ NO: Proceed to Step 4.	Pre-purchase	Staff, including Relevant Technical / Laboratory Staff	Oversight
3	Conduct a WHS risk assessment (refer to Section 4) to assess the implications of purchasing materials which fit into the categories outlined in Step 2.	Pre-purchase	Staff, including Relevant Technical / Laboratory Staff (Authorised by Nominated Supervisor / Manager	
4	Assess whether to purchase the material(s), based on the risk assessment above and an assessment of the budgetary, reporting and safety implications outlined in Step 2.	Pre-purchase	Staff, including Relevant Technical / Laboratory Staff (Authorised by Nominated Supervisor / Manager	
5	Has the purchase been approved? • YES: Proceed to Step 6. • NO: Do not proceed with the Purchase.	Pre-purchase	Staff, including Relevant Technical / Laboratory Staff	Authorise
6	Ensure that special safety and storage equipment have been delivered and installed, if required, prior to the delivery of chemical(s).	Pre-purchase	Staff, including Relevant Technical / Laboratory Staff (Authorised by Nominated Supervisor / Manager)	Oversight
7	Ensure that suitable containers are available for dilutions or decanting and they comply with WHS labelling regulations.	Pre-purchase	Staff, including Relevant Technical / Laboratory Staff (overseen by Nominated Supervisor / Manager)	

Step	Task	When	Action Owner	Senior Management/Management
8	Add the relevant SDS for the chemical to your SDS library within the chemical register (Chemwatch and 'hard copy' version). Also add or insert the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) for GHS and Australian Dangerous Goods (ADG) classifications.	On delivery	Staff, including Relevant Technical / Laboratory Staff	
9	Apply learnings from the WHS risk assessment, undertaken during Step 3, to produce verbal and/or written safe work instructions, which is applied by anyone that interacts with the chemical substance or that may need to respond to an emergency.	On delivery	Staff, including Relevant Technical / Laboratory Staff (Overseen by Nominated Supervisor / Manager)	Oversight
10	Ensure that the SDS, including the one page summary which is sourced from Chemwatch is available to anyone that is exposed to the chemical.	On delivery	Staff, including Relevant Technical / Laboratory Staff (Overseen by Nominated Supervisor / Manager)	
11	Use the original container supplied by the manufacturer, whenever possible. If not, ensure that all containers are labelled (these labels can be downloaded from Chemwatch).	On delivery	Staff, including Relevant Technical / Laboratory Staff	Oversight

Section 10 - Labelling Chemicals

(19) Labels, accessible via Chemwatch, must be attached to all containers that contain hazardous chemicals and dangerous goods. The scope of this legal requirement also extends to pipelines – inclusive of gas lines, immersion tanks and reaction vessels. There are limited exemptions to this legal requirement.

(20) Labels with expiry dates or date of purchase should also be attached to chemical containers. This will assist organisational units to identify chemicals that should be disposed of.

Task	When	Action Owner	Senior Management/Management
Ensure that all containers that contain hazardous chemicals or dangerous goods are labelled with the contents and GHS logos. This labelling should also be applied to pipelines - including gas lines, immersion tanks and reaction vessels.	Ongoing Staff, including Relevant Technical / Laboratory Staff	Staff, including Relevant Technical / Laboratory Staff	
Regularly inspect labels in chemical storage and laboratory areas to verify that all containers contain legible labels.	Every six months	Staff, including Relevant Technical / Laboratory Staff	Oversight
Keep labels on empty containers if they have not been rinsed and / or purged of vapour.	Ongoing	Staff, including Relevant Technical / Laboratory Staff	Oversight
Remove or spray paint over labels that are attached to cleaned, rinsed and purged containers and dispose of containers that are no longer needed.	Ongoing	Staff, including Relevant Technical / Laboratory Staff	

Task	When	Action Owner	Senior Management/Management
Will any chemicals, which are being transferred into another container(s), be used immediately? • YES: You will not be required to label the container(s) if the container is thoroughly rinsed and purged of vapours, immediately after use. • NO: Ensure that the container is labelled (labels can be accessed through Chemwatch).	Ongoing	Staff, including Relevant Technical / Laboratory Staff	

Note: Labels that apply to mixing processes can be sourced via the Chemwatch Credo Module. See Labelling Chemicals and Pipelines for more information.

Section 11 - Requirements: Facilities Management (FM), Suppliers, Contractors, Sub-contractors, and Vendors

Facilities Management

(21) Local Facilities Managers and their delegates should also maintain a chemical register within location specific folders within Chemwatch that are reflective of the chemical substances (hazardous and dangerous goods), which are held by FM on the local campus. This chemical register, including SDS libraries, and associated safe work instructions should also be outputted into a hard copy format.

Suppliers, Contractors, Sub-contractors and Vendors

(22) All ACU vendors, contractors, sub-contractors and suppliers that hold hazardous chemicals or dangerous goods on the University's premises for more than five consecutive days must maintain a chemical register that is reflective of these chemicals substances which are held. These registers, including SDS libraries, and safe work instructions must be readily accessible within chemical storage and handling areas.

(23) These organisations, ranging from cleaning companies to maintenance and construction firms, must also ensure that hazards and risks associated with chemical substances are managed and WHS risk assessments are conducted whenever these risks and associated treatments are unknown or cannot be easily resolved. Their staff any sub-contractors should also be trained in safe systems of work, including chemical management. The safe work instructions will be guided by these risk assessments and the safety information that is accessed via SDS and chemical labels. SDS libraries should be readily accessible to anyone that is handling, managing or disposing of chemicals. These organisations are also required to consult with ACU about hazards and risks.

(24) Other requirements include ensuring that chemical containers are recycled or disposed of in compliance with the instructions on SDS. These organisations must ensure that spill kits are available for spill containment and ensure that manufacturer's labels are attached to hazardous chemical containers. Suppliers, contractors, sub-contractors and vendors will also be briefed about emergency response procedures by local Facilities Management staff and these parties will consult with each other about hazards and risks.

Task	When	Action Owner
Ensure that all vendors review their chemical registers on a regular basis, at least annually, and they are applying safe systems of work to manage risks associated with the chemicals that are held 'on site'.	Annually	Local Facilities Manager
Submit an email to Associate Director Properties and Facilities Management with an update about the completion of the annual review of registers and safe work instructions, which are maintained by FM and ACU's business partners, including canteens.	Annually, 1 July (first working day, on / after this date)	Local Facilities Manager
Ensure that chemical registers are set up 'on site' whenever new suppliers, vendors or contractors bring chemical substances 'on site' for more than five days.	Ongoing	Local Facilities Manager

Section 12 - Emergency Equipment

(25) Staff members, students, contractors and visitors should be prepared for emergencies, including chemical incidents and spills. Emergency equipment should also be purchased to assist organisational units / Research Institutes to respond to emergencies and align these and other emergency protocols with the Critical Incident Management Policy.

(26) Technical Officers and / or Laboratory Managers should assist Executive Deans, HOS, SHOS, DHOS or Directors of Organisational Units / Research Institutes with advice about the types of spill control and emergency equipment that should be purchased to ensure that incident responses are effective. These requirements should also be determined by conducting formal risk assessments, which take account of chemical substances held, SDS, and the threats that ACU should prepare for.

Task	When	Action Owner	Senior Management/ Management
Emergency contact lists and emergency response information should be placed in chemical storage, preparation and training spaces.	Ongoing	Staff, including Relevant Technical / Laboratory Staff (Overseen by Nominated Supervisor / Manager)	Oversight
Spill kits are supplied for chemical storage areas. Refer to below for more guidance.	Before use of area	Local Facilities Managers / Managers of Organisational Units or Research Institutes	
Suitable first-aid facilities and fire - fighting equipment should be supplied near chemical storage areas.	Ongoing	Local Facilities Management Team	
Staff members and students should familiarise themselves with their emergency response scenarios and threats.	Ongoing	Staff, including Relevant Technical / Laboratory Staff	
Supply respirators, gloves and ventilation to chemical storage areas whenever the need for this equipment has been identified by a risk assessment or within safe work instructions.	Ongoing	Nominated Supervisors / Managers	Oversight and Authorise Expenditure

> Note: Serious and dangerous incidents and fatalities must be reported to the WHS (OHS) regulator in the state where an incident has occurred in. Reports of these and other incidents should also be logged in Riskware.

(27) Other spill equipment that may be purchased by organisational units:

a. Material to contain or absorb a spill, such as dry sand or any product listed on SDS;
b. Specific absorbents that will be stored close to where the chemical is used (e.g. sodium carbonate for acids);
c. Warning signs and spill barriers (see Section 16);
d. Containers for waste storage;
e. Leakage overdrums or other containers for placing leaking containers;
f. Clean-up equipment (e.g. mops, buckets, shovels);
g. Chemical reagents;
h. Telephones located near where hazardous substances or dangerous goods are used; and
i. Emergency shower and eye wash.

Section 13 - Signage

Task	When	Action Owner	Senior Management/ Management
A small GHS logo or dangerous goods diamond should be displayed at the door of every room where hazardous chemicals or dangerous goods are used	Ongoing	Local Facilities Management	Oversight
Placards must be placed at storage locations, rooms, buildings, and site entrances if WHS regulation placard quantities are exceeded.	Once quantities have been exceeded	Local Facilities Management	Oversight
Place a 'Danger - Flammable Liquids' sign in areas where there is flammable liquids are frequently decanted, or infrequently whenever more than 50 litres is decanted.	Ongoing	Local Facilities Management	Oversight

(28) Check SafeWork Australia: Hazardous chemicals signs (placards) for more information about these placarding requirements.

Section 14 - Chemical Preparation / Mixing

(29) Staff members, including Laboratory and Technical Staff, should conduct a WHS risk assessment, in consultation with relevant teaching staff or researchers, prior to mixing chemicals. The development of treatments, which are applied during the mixing process, should be guided by the risk assessment, reference materials, SDS, chemical labels and the Chemwatch Credo Module.

(30) During the chemical preparation and mixing process, only use the minimum quantities of the chemicals that are required. You should also consult the relevant safety data sheet (SDS), chemical label and other reference materials, including Chemwatch resources such as the Credo Module.

(31) Some of the treatments that may be developed include substituting a chemical for safer alternatives, applying physical treatments (risk controls) that reduce, suppress or contain substances, or limit the area of contamination and / or safe handling procedures. Personal protective equipment (PPE), such as gloves and dust masks, should also be used if it is a safety requirement that is specified within the relevant SDS.

(32) Some safety precautions include:

a. close containers of flammable products;
b. don't open containers that appear to be swollen;
c. use devices to assist you to safely pour chemicals;

d. ensure that the device can support the full weight of the container and will allow you to safely control the pouring process;
e. avoid re-using empty containers as they may contain hazardous residues; and
f. apply a cleaning protocol that reflects the chemicals that are used (e.g. acid bath wash, acetone wash).

(33) Also remember to:

a. close caps and lids tightly prior to storage;
b. ensure that you are complying with labelling requirements;
c. containers used by students in practical classes should be cleaned using appropriate methods;
d. all containers of controlled / stored products should have the manufacturers' label attached to the container and have date of purchase written on them; and
e. remaining working concentrations of chemicals should be labelled and returned to the chemical storage area.

Section 15 - Spill Control

(34) WHS Risk assessments should help shape organisational units' responses to any potential spills of chemical substances.

(35) Spill control equipment should be accessible, and the spill kit should typically contain absorbent materials and protective equipment. Some of the options that are available to reduce the risks of spills include storing chemicals in a spill tray (a plastic tub or a more sophisticated tray), in a cabinet with a built-in sump, behind a bund (an area with a small wall to prevent the flow of liquid) or on a bunded pallet, which contains a built-in sump.

Responding to a Spill or an Incident

Step	Task	When	Action Owner	Senior Management/Management
1	Determine whether it is safe to control the spill • YES: Proceed to Step 9. • NO: Proceed to Step 2.	Spill occurs	Staff, including relevant Laboratory / Technical Staff	Authorise
2	Call 000 and 8888 (internal) or 1300 794 452.	Spill is not containable	Staff, including Relevant Laboratory / Technical Staff	Oversight
3	Evacuate and secure the immediate area.	Spill is not containable	Associate Director Properties and Facilities or delegate to oversee security response	Oversight
4	Notify the relevant Campus Dean.	Spill is not containable	Associate Director Properties and Facilities or delegate to oversee response	
5	Determine whether the management of the emergency should be managed by the Incident or Critical Incident Response Group.	Spill is not containable	Campus Dean in consultation with COO	
6	Ensure that staff members / students involved in the incident are available to advise Emergency Services and the site is preserved (if a serious or dangerous, or a fatality has occurred).	Spill is not containable	Associate Director Properties and Facilities or delegate to oversee response	

Step	Task	When	Action Owner	Senior Management/Management
7	Contact the relevant person on your campus who will notify the WHS regulator in your state and EPA: • NSW: Manager Work Health Safety. • ACT, QLD and VIC Campuses: local Facilities Manager or WHS Officer'	The incident is a serious, dangerous incident or has resulted in a fatality	Associate Director Properties and Facilities or delegate to oversee response	
8	Incident or Critical Incident Response Group will be formed to manage the incident. Do not Proceed to Step 9.	Spill is not containable	Critical Incident Response Group	
9	Two trained staff, wearing Personal Protective Equipment, will be allocated to clean up the spill.	Spill can be contained by ACU staff members	Staff, including Relevant Laboratory / Technical Staff (Overseen by Nominated Supervisor/Manager)	
10	Absorb any free liquids, collect any solids and / or ventilate the area.	Spill can be contained by ACU staff members	Staff, including relevant Laboratory / Technical Staff	
11	Collect, label and dispose of spill residue as hazardous waste.	Spill can be contained by ACU staff members	Staff, including Relevant Laboratory / Technical Staff, overseen by Nominated Supervisor / Manager	
12	Decontaminate the affected area and equipment.	Spill can be contained by ACU staff members	Staff, including relevant Laboratory / Technical Staff	Oversight
13	Log a report of the incident within Riskware.	Once the area has been decontaminated.	Staff, including relevant Laboratory / Technical Staff	

Section 16 - Disposal of Laboratory Waste

(36) Waste disposal processes should contribute to both the maintenance of a safe working and learning spaces and should be environmentally responsible. A licensed contractor will be used to ensure that waste is disposed of in an appropriate way.

(37) Chemical waste is treated in line with its physical and chemical properties. Therefore, segregating waste is crucial to avoid unwanted reactions, including the production of toxic gases and explosions. If hazardous waste is stored temporarily, spill containment should also be available.

(38) Hazardous waste should not be allowed to enter drains and dilution if there is not an acceptable alternative to appropriate disposal.

Decision Making Processes to Support the Reuse or Disposal of Waste

Step	Task	When	Action Owner	Senior Management/Management
1	a) Are there unused chemicals left over from a mixing process that can be reused in another process? • YES: Proceed to Step 2. • NO: Dispose of any unused chemicals; ensuring that the hazards and risks associated with incompatible or reactive chemicals are managed. Refer to Regulations Controlling Chemical Use. OR b) Are there any unused chemicals from a research project? • YES: Can any of these chemicals be reused? ◦ NO: Proceed to Step 5. ◦ YES. Proceed to Step 2. • NO: No further actions are required.	Ongoing Ongoing	Staff, including Relevant Laboratory / Technical Staff (Overseen by Nominated Supervisor / Manager) Researchers (Authorised by Nominated Supervisor / Manager	
2	Are any of these chemicals reactive? • YES: Proceed to Step 3. • NO: Proceed to Step 4.	Ongoing	Researchers	
3	Submit a report to either your research supervisor or Nominated Supervisor / Manager which details the hazards associated with each chemical, reactive chemicals, risks associated with storing or reusing chemicals and the volume / quantity of chemicals.	At the completion of research projects / completion of mixing process	Researchers (Authorised by Nominated Supervisor / Manager)	Authorise
4	Liaise with the Laboratory Manager or Technical Officer within your School or Institute and Local Facilities Manager to coordinate the safe transfer and storage / and or disposal of chemicals (see procedure on the next page), including segregating incompatible chemicals.	At the completion of research projects / completion of mixing processes	Researchers	Oversight

Storage and Disposal Processes

Step	Task	Action Owner	Senior Management / Management
1	Ensure that waste that will be stored will be placed in a secure area and any potential spills can be contained. The decisions about storage or treatments should be guided by risks assessments, SDS, chemical labels and other reference materials.	Staff, including Relevant Laboratory / Technical Staff (Overseen by Nominated Supervisor / Manager)	Oversight
2	Is it safe to treat any of the waste streams ‘on site’ (acidic, alkaline or oxidising wastes, only)? • NO: Proceed to Step 3. • YES: Treat ‘on site’, whenever it is feasible. Proceed to Step 3.	Staff, including Relevant Laboratory / Technical, in Consultation with Nominated Supervisor / Manager	Oversight
3	Treat wastes and ensure that: • No remaining hazardous residues remain (achieved through triple rinsing or evaporation). • Lids have been removed. • Labels have been removed or defaced.	Staff, including Relevant Laboratory / Technical	Oversight

Step	Task	Action Owner	Senior Management / Management
4	Is any of the waste comprised of intact or broken glassware, sharps or chemical packaging? • YES: Proceed to Step 5 and ensure that any contaminated glassware is placed in a sturdy container with a plastic liner. • NO: Proceed to Step 7.	Staff, including Relevant Laboratory / Technical	
5	Are any of these chemical wastes compatible? • YES: Proceed to Step 9. • NO: The waste includes classes of incompatible chemicals such as flammable liquids, toxic and corrosive substances. Proceed to Step 6.	Staff, including Relevant Laboratory / Technical (Overseen by Nominated Supervisor / Manager)	
6	Continue to reference SDS, labels and reference materials to reduce the risks associated with dangerous reactions occurring during storage by separating these classes of chemicals. Proceed to Step 8.	Staff, including Relevant Laboratory / Technical (Overseen by Nominated Supervisor / Manager)	
7	Segregate compatible materials for reuse and recycling purposes.	Staff, including Relevant Laboratory / Technical	
8	Ensure that waste containers have been labelled, with estimates of concentrations, where possible, and storage date. Proceed to Step 9.	Staff, including Relevant Laboratory / Technical	
9	Send an email to laboratory staff and organisational areas to notify them of the bi-annual (six monthly), centrally funded, pick up of chemical waste for disposal.	Manager Work Health and Safety or Delegate	
10	Organisational units should work with local FM staff to transfer chemical waste to local School of Science storage areas and ensure that they comply with labelling requirements and safe work instructions.	Staff, including Relevant Laboratory / Technical	Stay informed

(39) Refer to Waste Classification, Waste Classification and Safety in Laboratories AS/NZS 2243.3 and 2243.4 and the National Standard NOHSC: 1015 (2001) Storage and Handling of Workplace Dangerous Goods.

> Note: All clinical and biological wastes should be classified as contaminated and the collection of this waste is not addressed in this procedure.

Section 17 - Maintaining Legislation References

(40) Hard copy or digital reference materials should be maintained by organisational areas, which include legislation, codes of practice and other information. A list of relevant documents can be found in Regulations Controlling Chemical Use.

Section 18 - Glossary of Terms

Term	Definition
ADG code	The Australian Dangerous Goods Code
AICS	Australian Inventory of Chemical Substances
AS/NZS	Australian Standard/New Zealand Standard

Term	Definition
Chemwatch	Proprietary software used to store safety data sheets about chemical hazards, print labels, conduct WHS risk assessments, maintain chemical registers and generate manifests to document volumes of ADG by Class. Visit https://jr.chemwatch.net/chemwatch.web/account/login?ReturnUrl=%2fchemwatch.we%20b%2f and email hr@acu.edu.au to request your location-specific organisational login details from the WHS team. Login details for students: Domain name: acu User name: Everyone 4 Password: Every19614
Dangerous Goods	Substances and articles that present immediate risks to life, health and / or property when transported or stored - classified into nine classes (1-9) as described in the Australian Dangerous Goods Code.
GHS	Globally-Harmonised System – developed by the United Nations to establish a uniform methodology for the classification and labelling of hazardous chemicals.
Hazardous Area	The area close to a source of flammable liquid where there is a high risk of ignition or explosion because of the presence of flammable vapours. The hazardous area can sometimes include an entire room.
Hazardous Chemical	Substances that present immediate and/or long-term risks to life, health and/or property when used - classified by the GHS.
NICNAS	National Industrial Chemical Notification & Assessment Scheme.
Safety Data Sheet (SDS)	A document published by the distributor or manufacturer to inform users about the risks associated with the use of a hazardous substance, previously called an MSDS (Material Safety Data Sheet).

Section 19 - Further Guidance

(41) Any staff member who requires assistance in understanding this procedure should initially speak to their Nominated Supervisor who is responsible for the implementation and operation of these arrangements in their work area. Should further information or advice be required, staff should visit Service Central.

Section 20 - Associated Information

(42) For related legislation, policies, procedures and guidelines and any supporting resources please refer to the Associated Information tab.

Section 21 - Appendices

(43) Additional information is available in the following appendices:

a. Appendix A: Labelling Chemicals and Pipelines
b. Appendix B: Regulations Controlling Chemical Use
c. Appendix C: Chemical Waste Disposal
d. Appendix D: Waste Classification
e. Appendix E: Guidance about Using Chemicals
f. Appendix F: WHS Risk Assessments and the Development of Treatments

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