

# WHS OP025 Hazardous Chemical Spills Procedure

## Section 1 - Overview

(1) The purpose of this procedure is to inform any person who experiences a chemical spill of the appropriate action to take to protect themselves and others from any health risks.

(2) UNE seeks to prevent exposure to chemical substances in the event of accidental spillage and/or subsequent discovery by staff Workers and/or students.

## Section 2 - Scope

(3) This procedure applies to all University facilities and operations where chemicals are used or stored; and

(4) Any Worker or Student that discovers a chemical spill.

(5) In an emergency, or incidents involving large quantities, WHS G008 Emergency Response Plan - Chemicals and Hazardous Substances, will apply. In specific high risk cases (e.g. HF azides) refer to the relevant SOP.

## Section 3 - Procedure

(6) Spills should be cleaned up as soon as they occur if safe to do so by a Competent Person.

(7) If a spill is large, uncontained, or considered an emergency then ring '000' for NSW Fire & Rescue then notify Safety & Security on 6773 2099.

### Minor and non-hazardous spills

(8) Wiping drips from containers, and splashes from pouring or decanting into other containers, and residues left on benches is considered housekeeping and is not included in the scope of this document.

### Moderate and hazardous spills

(9) Clear the immediate area.

(10) Inform other Workers in vicinity.

(11) Utilise the Spill Kit available on location.

(12) Ensure appropriate Personal Protective Equipment (PPE) is worn as specified by the Safety Data Sheet (SDS) and relevant risk assessment.

(13) If possible, have at least two Competent Persons clear the spill.

## All spills

- (14) Use appropriate Personal Protective Equipment (PPE) as specified by the Safety Data Sheet (SDS) and relevant risk assessment.
- (15) Ensure fire protection is available for flammable spills.
- (16) Control the source of the spill if possible (e.g. picking up a container that has fallen over or turning off a tap on a container).
- (17) Contain free liquids by creating a dam or boom around the spill, absorbing it if appropriate by utilising absorbent material or a spill kit.
- (18) Prevent spill entry into drains or contact with sensitive equipment.
- (19) Neutralise acids/alkalis if applicable and safe to do so.
- (20) Place all spill residues and contaminated absorbent materials in an appropriate container.
- (21) Decontaminate the affected area using an appropriate material (e.g. decon 90 may be suitable but check the SDS of the spilt material first).
- (22) Decontaminate any affected equipment.
- (23) Report the spill.
- (24) Conduct appropriate investigation and follow up action.

## Spill Kits

- (25) Each area shall be equipped with spill kits suitable for minor and moderate spills.
- (26) Spill kits suitable for large spills shall be located in central areas so retrieval of the kit is timely and unrestricted (e.g. store rooms).
- (27) The location of spill kits shall be signposted and known to users in the relevant area.
- (28) Spill kits shall be easily recognisable and labelled as such.

## Contents of spill kits

- (29) To determine the size and contents of spill kits required the relevant SDSs and applicable risk assessment should be referred to for the chemicals being used and/or stored in that facility.
- (30) The manager/supervisors must, in their area of control, ensure that spill kits are maintained. When contents are used, managers/supervisors shall ensure the contents are replenished.
- (31) All spill kits should include specific items identified by the risk assessment as well as the following where relevant:
  - a. Written instructions for the use of the contents;
  - b. Boom, absorbent sock or similar to stop the spill from spreading;
  - c. Adequate quantities of absorbent material, e.g. sand, fuller's or diatomaceous earth, or suitable proprietary substances for chemicals;
  - d. Calcium hydroxide (hydrated lime) or sodium carbonate (soda ash) for use on acidic spills and pesticide spills;
  - e. Sodium bisulfate for use with alkaline spills;

- f. A sufficient number of waste-recovery containers, e.g. plastic drums or lidded buckets that are compatible with the substances being kept, and appropriately marked as being for emergency use only;
- g. Spades or inexpensive dustpans that can be discarded or washed after use;
- h. Barrier tape and warning notice; and
- i. Personal Protective Equipment (PPE).

(32) Warning: do not use rags, paper towels or sawdust to clean up spills of oxidising acids.

(33) It is recommended to store the smaller spill kit contents in a lidded bucket that can be sealed. The bucket can be used for the waste disposal if required.

## **Spillage control**

(34) Impervious bunds or other containment systems must be provided to prevent the spread of product arising from a spill or leakage. This is most important in order to prevent the spread of fire or other hazardous condition, and to prevent environmental damage caused by spread to adjacent water courses or drains. The spillage control system should have a capacity:

- a. For packages, capacity greater than volume of the largest package and up to 25% of the aggregate quantity (depending on the class); and
- b. For tanks, 100% of the capacity of the largest tank plus the volume displaced by tanks in the compound.

(35) The capacity of a spillage control system should also be designed to hold any run-off water from firefighting activities.

(36) Spillage control may be provided by impervious bunds (walled compounds), grading of surfaces with drainage to a collection pit or through the use of spill control devices for individual packages (e.g. 200 litre drums).

(37) Where smaller quantities of liquid chemicals are used the provision of spill kits may be sufficient.

## **Neutralising**

(38) For small spillages of acids, the area should be flushed with water but not to the extent that the spillage is spread unnecessarily. The spillage should be contained with earth or sand and neutralised carefully with soda ash or sodium bicarbonate.

(39) For spillages of alkalis, the spillage should be contained using sand or earth. Sodium bisulphate or citric acid may be used to neutralise the alkali before clean-up. Residual alkali should be washed with water ensuring no contact occurs between washings and any aluminium or zinc containers.

(40) Spillages of organic solvents should be absorbed using diatomaceous earth or a proprietary product suitable for the absorption of such a liquid. Flammable solvents can be cleaned up with absorbent rags which are stored in fully open headed drums that are sealed, suitably labelled and disposed of by a licensed contractor.

## **Mercury spills**

(41) Detailed spill management information for mercury spills can be located in the SDS. Mercury easily vaporizes at room temperature, where it can be inhaled or absorbed through the skin. Prolonged exposure to mercury vapour adversely affects the nervous system. Symptoms may include irritability, depression, vivid dreams, inflammation of the gums, insomnia, loss of memory and vision impairment.

(42) As far as possible, mercury spillages should be removed using a suction device e.g. a Pasteur pipette. It may be necessary to use a flashlight to find fugitive droplets. Transfer droplets to a zip lock plastic bag. Consolidate the spill

as much as possible by using a thin piece of cardboard or plastic. Zinc powder should be applied liberally over any residual mercury to prevent the mercury entering the vapour phase.

(43) Proprietary mercury spill kits are also available containing suction devices, mercury sponges or a specially designed vacuum apparatus. The mixture should then be swept up and contained in a plastic bag which should be tightly sealed.

(44) All materials used for cleaning should be disposed of in a safe manner, recognising the hazards of the spilt material.

(45) If there is any concern about the extent of contamination the WHS Unit can organise for air testing to be carried out.

## **Discovery of suspected chemical spills**

(46) Avoid contact and breathing vapours.

(47) Attempt to identify the spilled substance if you can do so safely.

(48) Ensure any other person in the room is advised of the spill and they shall also be required to exit the room.

(49) In the event of large spills or spills that are known to be high risk, immediately call '000' for NSW Fire & Rescue then notify Safety & Security on 6773 2099. In an emergency, WHS G008 Emergency Response Plan - Chemicals and Hazardous Substances, will apply.

## **Discovery of suspected minor hazardous chemical spills**

(50) In the event of small spills, the following steps shall be followed by cleaners, students or any Worker that suspects a minor hazardous chemical spill:

- a. Turn off ignition sources if you can identify them and if this can be done safely.
- b. Lock all doors to the room upon exiting, after all persons have vacated;
- c. If an isolation lock is available, utilise this to secure the room;
- d. Place a temporary warning on the door crafted from the most adequate materials available (E.g. use paper and a marker and legibly hand write the notice) until more appropriate signage can be obtained and displayed.
- e. Contact the relevant Supervisor, Competent Person or Area Service Manager (ASM) and advise them of the spill. Remain available by phone so the relevant Supervisor, Competent Person or ASM can consult on the details of the spill if required.
- f. Obtain safety signage from UNE Safety and Security (that excludes entry) and display at all entrances to the room.

(51) The relevant Supervisor, Competent Person or ASM is to investigate the spill and attempt to safely identify the spilled substance.

(52) The room is to remain isolated until the relevant Supervisor, Competent Person or ASM for the room authorises clean up processes appropriate for the substance.

(53) Clean up shall be completed by a Competent Person based on emergency protocols in task risk assessment, experimental protocol or SOP and consultation of the relevant SDS.

(54) The relevant Supervisor, Competent Person or ASM is to approve and notify all relevant staff (including EBE and UNE Safety and Security) via email that the room may return to normal use.

(55) The person who discovered the spill is responsible for reporting the spill within 24 hours via UNE Safety Hub. UNE supervisors of contractors are responsible for submitting the report where contractors do not have access to the UNE reporting system. If all details are not available, submit all known information and ensure the report form is updated as soon as reasonably practicable.

(56) The relevant Supervisor or ASM is responsible for ensuring an incident investigation takes place to ensure there are effective control measures in place, or introduced, to ensure spillages are unlikely to occur in the future.

### **Reporting, investigation, debriefing and follow-up**

(57) All incidents must be reported within 24 hours via UNE Safety Hub:

<http://www.une.edu.au/safety/report-all-injuries-and-hazards>

(58) A debriefing session should be conducted for all personnel involved in the spill response after the spill has been resolved.

(59) The supervisor of the Worker involved in the spill shall investigate and allocate corrective actions via the incident report form.

(60) Restock all spill control supplies.

(61) Repair or refill all damaged or used equipment.

(62) Re-open the area when it has been cleared and is safe to resume operations.

### **Authority and Compliance**

(63) The Procedure Administrator, pursuant to the [Work Health and Safety \(WHS\) Rule](#), makes these procedures.

(64) University Representatives and Students must observe these Procedures in relation to University matters.

(65) These Procedures operate as and from the Effective Date.

(66) Previous Procedures relating to chemical spills are replaced and have no further operation from the Effective Date of this new Procedure.

## **Section 4 - Definitions specific to this Procedure**

(67) Competent Person means a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.

(68) Hazard means a situation or thing that has the potential to harm a person, property or the environment.

(69) Hazardous Chemical means any substance, mixture or article that satisfies the criteria for a hazard class in the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

(70) A Worker, as defined by the WHS Act, is a person that carries out work in any capacity for a person conducting a business or undertaking, including work as:

- a. An employee;
- b. A contractor or subcontractor;
- c. An employee of a contractor or subcontractor;
- d. An employee of a labour hire company who has been assigned to work in the person's business or undertaking;

- e. An outworker;
- f. An apprentice or trainee;
- g. A student gaining work experience;
- h. A volunteer; or
- i. Person of a prescribed class.

## Status and Details

<b>Status</b>	Current
<b>Effective Date</b>	21st January 2024
<b>Review Date</b>	21st January 2025
<b>Approval Authority</b>	Director People and Culture
<b>Approval Date</b>	21st January 2024
<b>Expiry Date</b>	To Be Advised
<b>Unit Head</b>	Kirsten Clayton Director People and Culture
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