

 <b>UNSW</b> <small>THE UNIVERSITY OF NEW SOUTH WALES</small>	<b>Hazardous Substances and Dangerous Goods (Chemicals) Procedure</b>
UNSW Procedure	
<b>Control number</b>	OHS332
<b>Linked UNSW Policy</b>	This procedure details actions and processes pursuant to the UNSW OHS Policy.
<b>Responsible Officer</b>	Director, Human Resources
<b>Authorisation</b>	Director, Human Resources
<b>Contact Officer</b>	Manager, OHS and Worker's Compensation
<b>Effective Date</b>	1 April 2007
<b>Superseded Documents</b>	OHS103 Hazardous Substances Policy, 20 December 2000 OHS201 Hazardous Substances Program, 3 October 2000
<b>Review</b>	This procedure will be reviewed in accordance with the OHS Management System Review Procedure.
<b>File Number</b>	TRIM 2007/1223

## 1. Purpose

This procedure outlines the basic principles for managing the storage and use of hazardous substances, dangerous goods, carcinogens and poisons at UNSW. Collectively the terms 'chemicals' or workplace substances will be used to incorporate all of the above varieties. The overarching principle is to provide a systematic method for identifying and controlling potential chemical hazards in order to minimise the risk of adverse health and safety effects to persons, the environment or property.

## 2. Scope

This procedure applies to all staff, students, visitors and contractors. It includes activities such as working with the substances, storing them, or supervising the use or storage of such substances. It applies equally where on or off UNSW campus sites.

## 3. Definitions

For the purposes of this procedure, the following definitions apply:

**Hazardous Substances**.....are substances which have the potential to harm the health of people and the effects are generally over long term use

**Dangerous Goods**..... Dangerous goods are substances or articles that pose a risk to people, property or the environment, due to their chemical or physical properties. Dangerous goods are usually classified with reference to the immediate hazard they pose rather than the long-term health effects.

**Poisons**... includes those substances listed as Scheduled Poisons under the Poisons and Therapeutic goods Act.

**Carcinogens**...are substances which have the ability to cause cancer.

## 4. Procedure

*Note: For laboratory based activities please use the UNSW Laboratory Manual as the basis for establishing and documenting your safe system of work.*

Steps	Actions	Who is responsible?
1. Purchasing	<p>Implement a system for controlled purchasing in the local area, such that hazards that cannot be controlled are eliminated at source (eg. <i>Highly toxic substance not purchased as ventilation in proposed area of use inadequate</i>). Refer to UNSW <a href="#">OHS Purchasing guideline</a>.</p> <p>Ensure that for all proposed new chemicals, the Material Safety Data Sheet (MSDS) is consulted before the material is purchased. See step 3.</p> <p>Ensure that when the substance enters the workplace it is added to the chemical register.</p> <p>If you are importing chemicals check that the substance is on the <a href="#">NICNAS</a> database.. Any hazardous substance used/stored in Australia must appear on the NICNAS database. It is the duty of the person importing the substance to check this database and notify NICNAS if it not present.</p> <p>The additional requirements for schedule 8 poisons are included in the UNSW <a href="#">Schedule 8 Drugs</a> procedure.</p> <p>If you intend to use Prohibited or Notifiable carcinogens you must first have a permit from NSW Workcover authority. Refer to <a href="#">Prohibited / notifiable carcinogens Procedure</a>.</p>	Head of the School/Centre or work area
2. Register	<p>Each local area (eg. a laboratory, workshop, store etc.) must have a workplace substances register which lists each hazardous substance and dangerous good in use (or being) stored in that area. See <a href="#">chemical register template</a> in Forms and Checklists.</p> <p>On the register, indicate which substances are dangerous goods. Record their dangerous goods class, packing group and UN number. The MSDS provides all this information.</p> <p>Note the quantity of dangerous goods being stored. This is needed to determine whether you are storing more than 'placard' quantities of dangerous goods. If you are, then your location must be included in the dangerous goods manifest for this building and appear on the annual notification of Dangerous Goods quantities to Workcover. See step 17.</p> <p>The register must be kept up to date so new substances must be added to the register when they arrive and those that have been disposed of, removed.</p>	Lab (or workshop etc) supervisor

	Contractors who are using hazardous substances must also keep a copy of their workplace substances register in the area where the substances are used. Refer to <a href="#">UNSW Contractor policy</a> .	
3. Material Safety Data Sheets (MSDS)	<p>The MSDS for each substance must be included in the chemical register. It must be readily accessible and available in the immediate vicinity at all times. If you are using an electronic system for maintaining MSDS's you must be satisfied that it can cater for this need. You must have a back up plan in the event of a computer or server failure.</p> <p>The MSDS must be from the supplier and must contain Australian contact details. If you are obtaining chemicals from overseas and the MSDS is from that country then forward the MSDS to the OHS unit who can arrange for it to be converted to an Australian format. It will then be made available on the <a href="#">Chemalert</a> database (See Tools).</p> <p>Suppliers are required to review and update MSDS's every five years. If you are keeping paper copies of MSDS then ensure that you re-print every 5 years.</p> <p>See the MSDS section in the <a href="#">information sheet</a> chemical risk assessments.</p>	Supervisor of the area
4. Labelling	<p>All labels must meet minimum standards including for decanted substances – see <a href="#">Labelling of Hazardous Substances Guideline</a> which specifies mandatory information required for labels. Mandatory information includes:</p> <ul style="list-style-type: none"> <li>• Product name</li> <li>• Risk and Safety phrases “(see guideline)</li> <li>• Contact details for supplier</li> <li>• Emergency information (at a glance)</li> <li>• Hazard warning word/dangerous goods class and symbol (eg. Flammable)</li> </ul>	Supervisor of the area
5. Labelling of enclosed systems	Hazardous substance contained in an enclosed system (such as a pipe or piping system or a process or reactor vessel) need to be identified and labelled. Suitable means of identification include colour coding (AS 1319, Safety Signs for the Occupational Environment) and labelling AS 1345 Identification of the Contents of Piping, Conduits and Ducts.	Facilities
6. Risk Assessments	<p>Risk Assessments must be completed for all tasks (projects/activities etc.) involving the use of workplace substances. The <a href="#">Risk Management Program</a> details how to carry out a risk assessment.</p> <p>In a nutshell there are 5 steps:</p> <ol style="list-style-type: none"> <li>1. Establish the context or set the scene ie describe the work, the quantities in use, the number of people in the</li> </ol>	Written by the person(s) involved in the work signed off by supervisor

	<p>area, the existing ventilation, space, equipment, facilities</p> <ol style="list-style-type: none"> <li>2. Identify the Hazards: For chemicals you must consult the MSDS and record the short and long term health effects as well as physical properties of the substance such as explosive capacity, flammability etc. Identify physical, ergonomic (eg prolonged pipetting), and environmental hazards.</li> <li>3. Assess the risk. This helps to rate the risk based on how severe the consequences will be and how likely they are to occur - see Chemical risk assessment <a href="#">information sheet</a></li> <li>4. Control the Risks – see next section</li> <li>5. Review the risk assessment and risk control measures. This must be done if there is any change in the environment, personnel, equipment, substances etc</li> </ol> <p>Risk Assessments must also be done on the facility / location used to store the dangerous goods eg. risk assessment for storage in a chemical store or one risk assessment that focuses on storage of dangerous goods for a laboratory.</p> <p>See dangerous goods storage <a href="#">checklists</a>.</p> <p>Risk assessments must be maintained on a document control register (ie. Register for risk assessments) to ensure that people are working from the latest version.</p>	
7. Risk Control Measures – selecting and implementing	<p>The <u>Hierarchy of Control</u> method for selecting the appropriate risk control measure must be utilised. See information sheet on <a href="#">Chemical risk assessment</a>.</p> <p>Engineering controls must be inspected and maintained. For example fume cupboards must be inspected 6monthly and placed out of service if they fail the test. The fume cupboard must not be used again until maintained and retested.</p> <p>Personal Protective Clothing and Equipment (PPCE) requirements must be identified, communicated and enforced.</p>	Head of the work area and Supervisors
8. Storage	<p>Storage quantities should be kept to a minimum to cater for demand but avoid excessive storage for long periods.</p> <p>Adequate storage facilities must be provided for all chemicals.</p> <p>For dangerous goods this includes requirements for separation and segregation for all incompatible substances. It requires having dedicated Australian Standard approved cabinets for each type of dangerous goods (depending on quantity stored)</p>	Head of the Area and Supervisors

	See the <a href="#">Storage of Dangerous Goods</a> Guideline.	
9. Safe Work Practices	<p>Safe Work Practices need to be implemented eg.</p> <ul style="list-style-type: none"> <li>• having systems for preventing unauthorised access,</li> <li>• providing adequate supervision (<i>commensurate with risk and level of competency of user</i>),</li> <li>• arrangements for working after hours,</li> <li>• method for induction for new staff/students etc</li> </ul> <p>These should all be documented in your laboratory manual.</p>	Supervisor of the area
10. Equipment and Safe Working Procedures (SWP's)	<p>All equipment used in conjunction with hazardous substances must be inspected and maintained in accordance with the manufacturer's instructions and relevant Australian Standards – refer to <a href="#">Plant Safety procedure</a> for further detail.</p> <p>SWP's need to be written, published and communicated (and maintained on a document control register).</p> <p>For some equipment which requires an established level of competence to operate, the competency requirements must be documented and an authorisation process established. Eg. A list of authorised persons who are allowed to decant cryogens. Such persons must have demonstrated competence in this task to the supervisor of the area. Access to the equipment must then be controlled to prohibit operation by unauthorised persons.</p> <p>In a situation where there are shared resources eg. staff/students from one school requiring access to equipment belonging to another school, the lines of responsibility must be established.</p> <p>All 'visiting' staff / students to the area where the equipment is housed must abide by the local area requirements including being able to demonstrate competency in the operation of the equipment.</p>	Supervisor of the area
11. Safe Disposal	<p>Waste minimisation practices should be encouraged through purchasing smaller quantities, using minimum quantities and sharing chemical resources where practicable.</p> <p>Disposal down sinks is prohibited - see Disposal of Hazardous <a href="#">Waste</a> Procedure.</p> <p>The University uses a licensed contractor (licensed by Department of Environment and Conservation (formerly EPA) to collect all hazardous waste on a weekly basis from UNSW premises (detailed in above procedure).</p> <p>Use the waste disposal form – <a href="#">chemical</a> to document</p>	Supervisor of the area

	details of your chemical waste and forward it to the OHS unit.	
12. Air Monitoring and Health Surveillance	The need to conduct either air monitoring or health surveillance should be identified by the local area supervisor – see <a href="#">Air monitoring and health surveillance Guideline</a>	Supervisor of the area
13. Emergency Facilities	<p>A register of potential emergency situations must be developed for each building – <i>for multi school buildings, each school/centre must have input into this register.</i></p> <p>The control measures such as</p> <ul style="list-style-type: none"> <li>• spill kits,</li> <li>• Personal Protective Clothing and Equipment (PPCE),</li> <li>• fire blankets/extinguishers,</li> <li>• first aid kits</li> <li>• Eye wash stations / emergency showers</li> <li>• suitable numbers of trained emergency wardens and first aiders,</li> <li>• emergency shut down procedures for equipment</li> </ul> <p>must be identified, put in place and monitored.</p>	Supervisor of the area
14. Dealing with Chemical Spills	<p>Follow the directions in the separate UNSW document <a href="#">Chemical spills</a> guideline.</p> <p>Follow the directions in the Emergency flip chart for dealing with internal emergencies.</p>	
15. Training	<p>All staff or students who work with chemicals must receive sufficient training in chemical safety to enable them to work competently in the laboratory/work area.</p> <p>Refer to the <a href="#">Training procedure</a> for further information.</p> <p>Once the training needs have been identified (local training needs analysis), the local area must establish a system for training their staff or students. The OHS unit can deliver basic chemical awareness training programs. However the supervisor of the area must provide sufficient information in order for the staff or students to work competently and safely in a multi-functional laboratory which may possess chemical, biological, radiation, equipment risks etc.</p> <p>See <a href="#">Information Sheet</a> for chemical safety training courses.</p>	Supervisor of the area
16. Record keeping	<p>The following records are required to be maintained for work with workplace substances</p> <ul style="list-style-type: none"> <li>• Risk assessments (in a controlled register)</li> <li>• Training records</li> <li>• SOP's (in a controlled register)</li> <li>• Chemicals register and MSDS's</li> <li>• Any air monitoring/health surveillance records</li> </ul>	Supervisor of the area

	<ul style="list-style-type: none"> <li>• Inspection and testing records for engineering controls</li> <li>• Dangerous Goods manifests (see section 16)</li> <li>• Emergency register and emergency plans</li> </ul>	
17. Inspections, Auditing and Review	<p>Each area must have a system for regularly inspecting the workplace to ensure that procedures are being followed and a high standard of housekeeping is being maintained.</p> <p>Hazardous Substances audits should also be periodically carried out to check that systems and procedures are being followed. These audits should do spot checks on registers, look for completed risk assessments, check for the adequacy of emergency facilities etc. See chemical substances <a href="#">audit checklist</a>.</p>	<p>OHS committees</p> <p>School based safety officers / Faculty OHS Coordinators</p>
<p><b>18. Additional Requirements for Dangerous Goods (DG's)</b></p> <p>DG Manifests Notification to Workcover Emergency Plans Placarding</p>	<p>15.1 A summary of the dangerous goods stored in each area must be kept and incorporated into the building <b>manifest</b>.</p> <p>15.2 A dangerous goods <b>notification</b> for each campus where quantities are exceeded must be provided annually to Workcover</p> <p>15.3 Specific <b>emergency information</b> needs to be provided for each building eg. emergency contact persons, location of essential services isolation points, location of nearest emergency facilities etc</p> <p>15.4 Dangerous Goods <b>placarding</b> is required for bulk storage facilities (eg. Liquid Nitrogen tanks) and for packaged stores where placard quantities are exceeded – see DG <a href="#">Manifest and placard procedure</a>.</p>	<p>Supervisor of the area</p> <p>OHS Coordinator in HR</p> <p>SECO and applicable OHS coordinator</p> <p>Supervisor of the area and OHS Coordinator</p>

## 2. Legal & Policy Framework

OHS Act 2000 and OHS Regulation 2001 – particularly Chapter 6 and 6a

AS: 2243.2 Safety in Laboratories – Chemical aspects

AS: 2243.6 Safety in Laboratories – Mechanical aspects

AS: 2243.8 Safety in Laboratories – Fume Cupboards

AS: 2243.10 Storage of Chemicals

AS 2982 Laboratory construction

AS: 4332 Storage and Handling of gases in cylinders

AS:1894 Safe handling of cryogenic fluids

AS: 1940 Storage and Handling of flammable and combustible liquids

AS: 4326 Storage and Handling of Oxidising Agents

AS: 2714 Storage and handling of Organic Peroxides

AS: 4452 Storage and handling of toxic substances

AS: 3780 Storage and Handling of Corrosive Substances

## 2.1 Associated Documents

1. UNSW Purchasing Procedure
2. Schedule 8 Drugs Procedure
3. Prohibited and Notifiable Carcinogens Procedure
4. Labelling of Hazardous Substances Guideline
5. Risk Management Program
6. Storage of Hazardous Substances and Dangerous Goods Guideline
7. Plant Safety Procedure
8. Safe Disposal of Hazardous Waste Procedure
9. Air Monitoring and Health Surveillance Guidelines
10. Training Procedure
11. Placards and Emergency Manifests Procedure

## 6. Evaluation & History

Review of this procedure will occur in accordance with the [UNSW OHS Management System Review Procedure](#).

## 2.1 Modifications \*\*

Version	Date	Author	Approval	Sections modified	Details of amendments
0.1	01/11/2006	Martina Lavin	Director Human Resources	Complete revamp of 2 previous documents	This procedure replaces both the Hazardous Substances Policy and the Hazardous Substances Program
				Major changes include removing the detail from section 4	Responsibilities (s4 of Policy), are now outlined in the <a href="#">OHS Responsibility</a> , Authority and Accountability Procedure.
				Separate guidelines have been written for sections of the Hazardous Substances Program	New guidelines replace Section 1.4 (Health Surveillance), Section 1.1.3 (Labelling). Section 1,1 on risk assessment moved to the <a href="#">Risk Assessment Procedure</a>
2.0	01/04/07	Martina Lavin	Director Human Resources		Minor changes from consultation
2.1	8/1/2008	Martina Lavin	Director Human Resources	Section 4	New subsection 14 added in Section 4 – linking this document with the Chemical Spill guideline and referencing the UNSW Emergency Procedures