Chemicals and other Hazardous Materials, Management Procedures

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

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1. Context

This procedure supports the University Work Health and Safety Policy.

The purpose of this procedure is to outline the University's processes for managing risks associated with the purchase, transport, storage, and use of chemicals including dangerous goods, hazardous substances, drugs, poisons and controlled substances.

This procedure applies to any work area within University operated and / or maintained sites, or any situation where a person working at the University may be exposed to chemicals.

13th September 2013

2. Definitions

In the context of this document:

ADG Code means the Australian Code for the Transport of Dangerous Goods by Road and Rail Code;

AIDGC means the Australian Institute of Dangerous Goods Consultants;

Chemical in this document means a substance or material that is planned for use in a process or procedure, or as an activity to support a process or procedure such as cleaning prior to or following a procedure. Chemicals can be in a liquid, solid or gas form at the temperature and pressure being used or at standard temperature and pressure. They may or may not also meet the criteria of a Dangerous Good and / or a Hazardous Substance. Chemicals may include a commonly used product such as water or piped natural gas, where those products are in volumes that may create a high level of risk.

Dangerous Goods means substances that are potentially hazardous to people and property, and are classified according to their immediate physical or chemical properties as:

a) Substances or articles that under the ADG Code are listed or described as:

(i) dangerous goods of Class 2, 3, 4, 5, 6.1, 8 or 9, or

(ii) goods too dangerous to be transported,

b) or are C1 combustible liquids;

Hazardous Area means an area or space in which the atmosphere contains or may reasonably be expected to contain any material or substance (including, but not limited to, combustible dusts, combustible fibres, flammable vapours, flammable liquids, flammable gases, flammable or combustible fumes) at a concentration that is capable of being ignited by an ignition source.

Hazardous Substance means a substance that has the potential to harm human health as:

(a) listed in the document entitled “List of Designated Hazardous Substances [NOHSC: 10005 (1999)]” published by the National Occupational Health and Safety Commission (NOHSC), as in force from time to time, or

(b) fits the criteria for a hazardous substance set out in the document entitled “Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008 (1999)]” published by the NOHSC, as in force from time to time;

Drugs, Poisons and Controlled Substances means substances fitting Schedule 2,3,4,5,6,7,8 and 9 as published in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP);

Manifest means the University chemical Data Base which is held on line through ChemWatch.

Responsible Person means the person who has control over the activities where chemicals are in use. This person is the most senior person involved in the overall activity such as the Chief Investigator, Course Coordinator, Director, or Team Manager. This person will retain responsibility for compliance with these procedures irrespective of whether or not they have delegated actions to staff or others such as a laboratory manager or purchasing officer. The responsible person shall ensure that adequate resources and information are available to all staff and persons potentially affected by chemicals under their control and that controls are in place to ensure the chemicals are purchased, handled, stored and disposed of in a safe manner.

Register means a list of chemicals at the local level. A register can also be used to populate the Manifest.

Safety Review means The University procedures for Risk Assessment Reviews for research and teaching projects.

Packages means containers that are suitable and appropriate for the placing of chemicals and other materials that permit safe transportation or storage.

Scientifically Qualified Person may be in charge of a laboratory or department, or a person acting under the direct supervision of such a person, who is authorised to possess and use any schedule 2, 3 or 4 substance that is required for the conduct of medical or scientific research or instruction or the conduct of quality control or analysis (as per Appendix C, clause 19 of the Poisons and Therapeutic Goods Regulation 2008).

Site means a site in the University manifest and refers to a building.

Store A store in the University manifest is a specific location where chemicals are stored or handled, this may include but is not limited to a room, laboratory, tank, bunker, shed, freezer, cabinet.

3. Procedure

3.1. Acquisition (Purchase or Donation)

Prior to the initial purchase or donation of a chemical the following shall occur:

A copy of the MSDS shall be obtained from the manufacturer / supplier or accessed via ChemWatch;

3.1.1 A risk assessment shall be undertaken if the product is a Dangerous Good, Hazardous Substance or Scheduled Drug or Poison.

3.1.2 Conduct a full risk assessment (an example template is detailed in **Appendix L: Sample Dangerous Good – Hazardous Substance Risk Assessment Form**);

3.1.3 The risk assessment will be reviewed by the University Chemical and Radiation Technical Committee if any of the following apply:

- Any of the ChemWatch Hazard Ratings are "High" or "Extreme";
- The chemical appears on the list of Carcinogenic substances as detailed in **Appendix B: Carcinogenic** Substances**;**
- The chemical is a Schedule 4 or 8 drug (Refer to the Poisons Standard 2009);
- The chemical is an explosive - Class 1 Dangerous Goods (Refer **Appendix E: Explosives and Fireworks**);
- The chemical is a security sensitive dangerous substance (Refer **Appendix D: Security Sensitive Dangerous Substances**);
- The quantity stored falls into the placard quantity category (Refer **Appendix I: Dangerous Goods Placard and Manifest Quantities**);
- The chemicals are listed in the Industry Code of Practice for the Prevention of diversion of legitimate industrial chemicals into illicit drug manufacture (Refer **Appendix F: Chemical Diversion into Illicit Drug Manufacture** for details);
- Chemical has special disposal requirements or is sensitive to the environment.

3.1.4 Confirm the chemical is not to be used in a prohibited manner as listed in **Appendix C: Prohibited uses of Hazardous Substances**; If it is going to be used in a prohibited manner as listed in Appendix D Seek approvals / authorisations as detailed in Section 3.2;

3.1.5 Order the chemical via the Technology 1 Financial system or via University Purchasing Card if Head of School Approval has been given for this to occur. (NOTE: The ordering process shall also consider ordering the minimum practical inventory that will allow the task to proceed while not carrying excessive stock. It should also consider the packaging size to reduce the risk from spills.);

3.1.6 Verify that the controls identified in the risk assessment have been implemented;

3.1.7 Add material to Chemical Manifest as detailed in Section 3.4.

3.2. Notifications and Approvals

Prior to placing any order for any of the following materials, notifications, licences and approvals shall be sought as appropriate for:

- Chemicals appearing on the list in Appendix B: Carcinogenic Substances**.** These shall be notified to WorkCover on the Prescribed Form and a copy provided to the Health and Safety team. Approval is required before any order is made.
- Security Sensitive Dangerous Substances as detailed in **Appendix D: Security Sensitive Dangerous Substances**;
- Explosives or Fireworks as detailed in **Appendix E: Explosives and Fireworks**;

- Schedule 8 or 9 drugs as detailed in Poisons Standard 2009;
- All chemicals shall be approved via the **Safety Review** process;

All chemicals meeting the following criteria shall be notified to the **Health and Safety Team via the safety review process**:

- The quantity of stored chemicals equals or exceeds the Manifest quantity as detailed in **Appendix I: Dangerous Goods Placard and Manifest Quantities**; or
- Chemicals are notifiable to WorkCover as listed above;
- Health surveillance is required as identified in **Section 3.3.**

3.3. Health Surveillance

Health surveillance shall be provided for each employee who is exposed to a hazardous substance if there is a risk to the health of the employee as a result of that exposure, and:

- the hazardous substance is listed in (**Appendix A: Substances where Health surveillance is required**); or
- the exposure to any other hazardous substance is such that:
  - An identifiable disease or other effect on health may be related to the exposure; and
  - There is a reasonable likelihood that exposure to the substance and thus the disease or other effect on health may occur under the particular conditions of work; and
  - There is available an effective technique for detecting indications of the disease or other effect on health.

The MSDS and the Health and Safety Team can provide further guidance.

3.4. Manifest and Registers

3.4.1 Manifest

All University sites shall be included in the manifest stored on the ChemWatch Data Base, which shall be maintained by local workgroups, and accessible to security services with a hard copy located at Security. The Health and Safety Team shall maintain a watching brief over the contents of the manifest. The manifest shall contain copies of the MSDS's for all chemicals including the Dangerous Goods listed in the manifest and details of any specific control measures. The manifest:

- Provides emergency services with information on the quantity, type and location of dangerous goods on the premises, to enable them to respond appropriately to any serious incident;
- Provides the list of dangerous goods for the register and forms the basis for notification to WorkCover;

- Identifies where dangerous goods are stored and handled in quantities that exceed, or are likely to exceed, the relevant placarding quantities;
- Supports local **registers** by providing a listing of all dangerous goods and hazardous substances that are used or produced in the premises;
- Identifies where dangerous good quantities are over placarding limits for individual storage locations, rooms or sites (buildings);
- The manifest register is useful as a source of information and as a management tool.

At a local level the manifest ensures individuals;

- Have an inventory of hazardous substances stored and used in their area;
- Have readily available access to copies of MSDS's for all hazardous substances stored and used in their area;
- Identifies storage incompatibilities between Dangerous Goods (DG) classes;
- Can prepare and print labels which include risk and safety information;
- Can complete and store a risk assessment using the Chemwatch risk assessment tool;
- Can create reports;
- Have access to appropriate information in an emergency;
- Can contact Chemwatch directly for technical advice.

Training in populating, updating and use of the data base will be provided through training courses managed by the Health and safety team and each site shall ensure that at least one person from the site where chemicals are stored or used has attended the training and is competent in using the data base.

The manifest shall be reviewed by the School every 5 years or sooner if circumstances change (i.e. New building, relocated store etc);

Local Workgroups are expected to keep the manifest up to date by:

- Removing materials if they are no longer stored on-site;
- Adding materials when they are introduced into the work location;
- Ensuring the quantity listed on the manifest for each material is the maximum quantity that could be stored in that location at any given time.

All non-University groups located in facilities owned by the University must understand their duty to provide their DG inventories to the University for inclusion on the manifest. Similarly, University groups located in facilities owned by other organisations must ensure they provide a copy of their DG inventory to that organisation.

Location

- A copy of the manifest must be kept on the premises in a secure place easily accessible to the emergency services. Security Services shall have access to the manifest.
- *Building manifest DG reports will be located next to the fire panel along with a floor plan in all placarded buildings.*

Manifest Layout

The manifest consists of three levels.

- First level (Building)

All buildings are already listed on the manifest. Buildings are entered on the manifest as the building code found on the Campus map e.g. Life Sciences Building = **LS**, The Forum = **SCH** etc. NIER buildings are identified as **NIER-A** (NIER A Block) etc.

Any buildings which are not at Callaghan Campus have the prefix **Z** e.g. David Maddison Building = **ZDMB**, Newbolds = **ZNEWBOLDS**. Buildings at Ourimbah Campus have the prefix **ZOURIMBAH** e.g. Science Laboratories 1 is listed as **ZOURIMBAHSL1**

Dangerous Goods depots and tanks which are located separate to a building are listed on the manifest as the building they are closest to and SITE reference Code from the map key e.g. the Liquid Nitrogen Storage Tank is **SB SITE-E1**

- Second level (Room number)

This is the room number of the room where the chemicals are stored. In some cases this may already be on the manifest but in most cases this will need to be entered when a facility enters their data.

- Third level (specific storage location)

This is where in the room the material is stored e.g. chemical shelf, fridge, -20^{o}C freezer/-80^{o}C freezer, Corrosive cabinet, Flammable cabinet, Toxic Cabinet, Poison Safe etc.

NOTE: if there is more than one freezer or shelf they shall be numbered to permit clear identification (e.g. Freezer 1, freezer 2 etc).

Information required to be included in the manifest

- the full name of each material
- the manufacturers name (the product code is also useful if there is a number of reagents with similar names)

- number of storage containers and maximum capacity (volume/weight) of those containers- must enter the maximum quantity (containers x capacity) expected to be held in an area at any one time.
- The storage location including- building, room number and specific storage description (chemical shelf, fridge, -20oC freezer/-80oC freezer, Corrosive cabinet, Flammable cabinet, Toxic Cabinet, Poison Safe etc).

Materials not to forget to include on the manifest

All chemicals and reagents must be entered onto the manifest. Materials often overlooked include- cleaning products, liquid nitrogen, kitchen material such as cooking oils, art materials- glue, paint, etc, gas cylinders and chemical waste such as solvent waste bottles attached to lab apparatus

Materials not found on ChemWatch Database

If you find you have a material which is not listed on the ChemWatch database please forward an electronic copy of the manufacturers MSDS to Health and Safety to forward down to ChemWatch to enter onto the database.

Security

Once staff have received training in how to use the manifest they will be issued with a password. Security is set for individual facilities or in some cases a number of facilities. We ask that you do not give the Password you are issued with to anyone else unless you have discussed this first with Health and Safety. Please ensure you only add or edit chemical listings you have responsibility for.

3.4.2 Registers

Each area where Dangerous Goods / Hazardous Substances are stored shall have a register. The register can be a copy of the Manifest or a separate document. Typically the copy of the manifest is used where the workgroup does not monitor actual quantities of the materials. Where the quantities of materials are required to be managed (e.g. Schedule 4, 8 and 9 drugs, poisons, when more than one group is using the materials etc) a local register is appropriate as a record of the purchase, usage and disposal of the material(s).

Minimum information needed in a register

The Regulation requires that the minimum information that must be included in a register is a list of all dangerous goods present, together with the MSDS for all dangerous goods for which an MSDS is required under the Regulation (i.e. the supplied substances and goods). The same document may also contain a list of hazardous substances together with the MSDS for all hazardous substances that have been supplied. Include all substances, even those such as emissions and dusts generated, since the risks arising from these must be assessed.

Any relevant risk assessment information including the completion of simple and obvious risk assessments should also be noted in the register.

Keeping the register up to date

The register must contain entries for all chemicals currently used or produced at the site. The register should be updated as new dangerous goods or hazardous substances are introduced to the premises and the use or production of existing dangerous goods is discontinued.

Access to the register

Chief Investigators, Heads of School or managers must ensure that all people who handle or store dangerous goods have ready access to the register. Those people who could be exposed to a hazardous substance must also have access to the register. Employee representatives and relevant public authorities should also have ready access to the information in the register.

The register shall be clearly labelled "Dangerous Goods / Hazardous Substances" Register. The register can be printed off from the Chemwatch manifest in the form of a report and shall be stored at the entry to the area / room the register relates to. The **Manifest** containing all area registers shall be kept on the ChemWatch Data Base. Storage of wastes shall also be included on the register.

The register shall;

- Be maintained by the workgroup / research group or school. The Faculty Pro Vice-Chancellor has the ultimate responsibility to ensure that all groups are maintaining the Manifest and registers;
- Contain a listing of all Dangerous Goods / Hazardous Substances as detailed in ChemWatch. Note empty tanks, vessels and bottles are to be classified as "full";
- Be reviewed every 5 years or whenever a significant change has occurred. A record shall be kept of the review.

3.5. Risk Assessment

General

A risk assessment shall be conducted for each Dangerous Good, Hazardous Substance or Scheduled Drug or Poison. The assessment shall be conducted prior to accepting the goods on site or the manufacture of chemicals to ensure that the goods are acceptable for use on site, and that the appropriate controls are in place.

Where there are no specific risk controls required then a notation shall be made in the register.
NOTE: *Refer to the* ***Section 3.4*** *for storage of Risk Assessments.*

The assessments shall be made in ChemWatch or the form detailed in **Appendix L: Sample Dangerous Good – Hazardous Substance Risk Assessment Form** with as a minimum the MSDS for reference. Further guidance is available in **Appendix K: Relevant Guidance and Standards**.

The risk assessment shall be reviewed:

- Every 5 years or sooner if a significant change has occurred;
- Whenever there is evidence that the risk assessment is no longer valid;
- An injury or illness results from exposure to a hazard to which the risk assessment relates; or

- There is a significant change relating to the risk assessment.

For all Placarded, Manifest and Bulk Storages the risk assessments and outcomes from the assessments shall be coordinated by the person responsible for the storage.

This shall involve;

- Inclusion of requirements into Emergency Plans;
- Implementing engineering changes;
- Development of Safe Work Method Statements and procedures as relevant;
- Establishment of mechanisms to ensure the ongoing adequacy and implementation of these systems.

Assessors

For quantities less than the Placarded quantity **(Refer Appendix I)** a person capable of interpreting an MSDS, and the relevant Code of Practice can facilitate the risk assessment.

In cases where the quantity of dangerous goods exceeds the Placard level, but remains below the **"manifest"** level, persons competent in the relevant Australian Standard / statutory instrument and experience in risk assessment would be appropriate for facilitating the risk assessment.

Where the goods are above the **"manifest"** level, or where incompatible goods are kept in the same location, or where processing occurs; an accredited member of the Australian Institute of Dangerous Goods Consultants (AIDGC), or a chemical engineer competent in the risks and processes is acceptable for facilitating the risk assessment..

Hazardous Areas

The Responsible Person for the area shall ensure all Hazardous Areas are classified and there is a map defining these areas. The classification process shall be conducted by a competent person who is eligible to become an accredited member of the AIDGC.

Processes shall be put in place to ensure the controls over the Hazardous Areas and storages are maintained operationally.

3.6. Placarding, Signage and Labels

Outer Warning Placarding

Each building (site) storing any chemical over the Placard Quantity as detailed in **Appendix I: Dangerous Goods Placard and Manifest Quantities** shall have outer warning placards displayed at all entrances to the premises that emergency services would use, or be likely to use in the event of an emergency. This includes all road and major pedestrian accesses.

Refer **Appendix J: Placarding Signage Requirements** for details.

Dangerous Goods in Bulk

The quantities defining “bulk” are:

- for gases – a container of more than 500L “water capacity” (usually a tank);
- for liquids – a container of more than 450L capacity (or a mass of more than 450Kg);
- for solids – more than 450kg (or more than 450L container capacity), which includes uncontained solids such as a pile on the ground.

A bulk container, vehicle or an Intermediate Bulk Container (IBC) marked in accordance with the ADG code is acceptable (apart from combustible liquids).

The placard must be located on, or adjacent to the bulk container (such as a tank) or storage.

Placarding for Packaged Dangerous Goods

For all areas that store Dangerous Goods in packages in quantities exceeding those listed in the **Placarding Column** of **Appendix I** refer to **Appendix J: Placarding Signage Requirements**

With the placard shall also be a sign with the number or designation of the Dangerous Goods store.

No Dangerous Goods classed as “Too Dangerous to Handle” are to be on site unless compliance with requirements of the WHS Regulation 2011 is proven.

The placards shall be located:

- At the entrance to each building;
- At the entrance to each room or enclosed section where the placarding quantities are exceeded; and
- Adjacent to any external storage locations.

Where Dangerous Goods have been permanently removed, the Placarding shall also be removed.

Labels

Containers that are to be reused for other purposes than the original shall have all references to the DG's removed.

A container into which dangerous goods are transferred for use within the next 12 hours need only be labelled with the product name and risk and safety phrases. A container into which a hazardous substance is decanted for immediate use need not be labelled, so long as it is under direct control by a person at all times and cleaned immediately after it has been emptied of the substance.

All piping, vessels and enclosed systems shall be labelled with their contents. Australian Standard AS1345 provides guidance.

Safety and warning labels on chemical storage containers shall be maintained.

For containers **less than 500mL** the labels should have the following:

- Signal words, dangerous goods class and subsidiary risks
- Name, other ingredients (solvent), UN No.

- Risk and Safety phrases
- First aid procedures
- Details of the person who prepared the sample –name and contact
- Date prepared or Expiry date
- Reference to MSDS

If the container has stored **volumes greater than 500mL**, the following **additional** information is required:

- Directions for use
- Emergency procedures

3.7. Emergency Preparedness

Risk Assessment

The Risk Assessment process shall define the requirements of the fire and emergency systems for a specific Dangerous Goods store or product. These shall be included in the Emergency plan of the area and the site if deemed significant enough to do so.

The need for neutralisers shall be considered as part of the risk assessment and procedures for use, and included in the register.

Spill Kits

All facilities where hazardous substances and Dangerous Goods are stored and/or handled must have a spill kit appropriate for the material stored/handled there.

The University has a number of portable 140L Spill kits, further information available at Chemicals and hazardous materials web page.

3.8. Disposal and Wastes

Waste disposal shall be in accordance with statutory guidelines and University licence requirements. The MSDS shall be consulted for guidance on environmental consequences.

Disposal methods shall be detailed in the Risk Assessment Review submission.

Waste shall only be disposed of with licensed contractors, more information at Chemical Waste Collection. Copies of the contractor licence where applicable and each disposal event shall be kept.

Please note the following waste will not be accepted. Contact Health and Safety wastecollection@newcastle.edu.au for further information regarding these waste types.

- DG class 1 explosive waste
- DG class 6.2 infectious waste
- DG class 7 radioactive material

Use of disposal down drains shall be minimised and be as per the university licence and guidelines. Hazardous Waste shall be disposed of in accordance with the Environmental Sustainability Policy..

3.9. Records

The following records shall be kept for the defined periods. A copy is to be held locally while the chemical or procedures are continuing, and a copy is to be kept with records Management (generally this will be via use of the TRIM system which the Health and Safety Team can access and add documents to.

Records Type	Period
Risk assessments where the need for atmospheric monitoring or health surveillance **is** identified	30 years
Risk assessments where atmospheric monitoring or health surveillance **is not** required	5 years after last change or once decommissioned
Records of training and induction of persons likely to be exposed to hazardous substances	5 years
Persons potentially exposed to carcinogenic substances	30 years
Persons exposed to lead risk work	5 years after last entry
Maintenance records of tanks, pipes, fire system, structures and bunds	Life of the asset

3.10. Training

Personnel, who purchase chemicals, manage a facility or facilitate chemical risk assessments shall be trained in the:

- Contents of this procedure;

Personnel who use, manage, transport or store chemicals shall be trained in the:

- Elmo Online Chemical training;
- Nature of the hazards, and the processes used for the identification, assessment and control of risks relevant to their duties;
- Use and maintenance of the processes to control the risks;
- Operation of the emergency plans, spill response and the equipment relevant to their duties;
- Risk assessments / safe work procedures for the chemicals they are exposed or use;
- Correct selection, use, fitting and maintenance of equipment and PPE; and

- ChemWatch

3.11. Storage

Chemicals shall be stored in accordance with the regulations, codes of practice and relevant standards. Refer **Appendix K: Relevant Guidance and Standards** for guidance material and **Section 3.6.**

3.12. Suppliers / Disposers

Where Dangerous Goods are supplied / removed from site in other than Packages, the department shall obtain copies of the Suppliers / Disposers risk assessments for the control of transfer within, to and from the site.

Where these transfers occur, the site shall have in place systems to approve and manage the process so that the University maintains control.

3.13. Changes

Any changes to, additions to, or permanent removal of Dangerous Goods / Hazardous / Schedule Substance involving the type, use, quantity or storage location shall trigger a review of the:

- Register;
- Manifest;
- Site Map;
- Placarding;
- WorkCover notification requirement;
- Emergency plan; and
- Risk Assessment.

3.14. Inspections and Audits

Each site shall conduct the Laboratory Safety Checklist 6 monthly. This shall include the storage facilities.

The Chemical and Radiation Technical Committee (CRTC) and the Health and Safety Team will periodically audit departmental compliance against this procedure and legal requirements

4. Accountabilities

Executive Team shall

- Implement and apply this procedure within their area of responsibility;
- Confirm or reaffirm responsibilities for managing this procedure; and
- Provide resources to implement the requirements of this procedure;

Heads of Schools and Chief Investigators shall

- Implement the requirements of this procedure in their site;
- Ensure that relevant persons (including contractors, academics and students) working under their control are aware of, and abide by the relevant content of this procedure;
- Ensure personnel, researchers, contractors and any other relevant persons are appropriately trained and competent to provide full and ongoing implementation of the risk assessment and safe work procedure; and
- Manage Minor and Placarded stores, including;

  -Identify to Facilities Management when a store requires placarding so that signage can be ordered and installed

  - Identify and rectify any store segregation incompatibilities
- Communicate the requirements for Students, Staff, and Researchers to follow Safe Work Method Statements and procedures as well as utilise Personal Protective Equipment (PPE) as and when required

NOTE: These tasks and functions may be delegated to other people to facilitate however the overall responsibility is retained by the Head of School and Chief Investigator.

Laboratory Manager

Shall manage activities to ensure that the following is undertaken;

- Collate the Laboratory and Faculty registers to form the University register;
- Ensure a hard copy of the current facility manifest/register and MSDS's are available in the facility;
- Manage the process for risk assessments and control of all Placard stores;
- Ensure due process is followed for all Placard stores;
- Ensure an appropriate spill kit is stocked and available to manage small to medium spills;
- Enforce the requirements for Students, Staff, and Researchers to follow Safe Work Method Statements and procedures as well as utilise Personal Protective Equipment (PPE) as and when required

Students, Staff and Researchers shall

- Follow the requirements of the relevant risk assessment / safe work procedure;
- Follow the specific requirements for individual products; and
- Advise their supervisor when they encounter a substance that has not been assessed.
- Comply with requirements for following Safe Work Method Statements and procedures as well as utilising Personal Protective Equipment (PPE) as and when required

Health and Safety team shall

- Manage the University manifest;

- Notify WorkCover with regard to manifest quantity Dangerous Goods;
- Liaise with the emergency services such as the fire brigade;
- Identify to Facilities Management when a site (building) requires placarding so that signage can be ordered and installed;
- Provide a process for risk assessments and control of all Manifest stores;
- Facilitate the provision of the generic training courses in Chemical Storage and Handling; and
- Provide information and support to implement and enable compliance.

5. Essential Supporting Documents

- Elmo training;
- Safety Risk Assessment Review processes;
- Laboratory Safety Manuals
- Laboratory Safety Checklists.
- Chemical Spill Guidelines

6. Related Documents

ADDITIONAL DATA REQUIRED

Key Words

Chemicals

Dangerous Goods

Hazardous Substances

Scheduled drugs and poisons

Radioactive Substances

Procedure Sponsor – Deputy Vice Chancellor (Research)

Procedure Owner – Director Human Resource Services / Associate Director Health and Safety

Procedure Contact Position - Senior Safety Officer – Laboratories and Research

For Official Use:

The following data will be entered after the document is approved.

Date Approved:

Approval Authority:

7. Appendices

Appendix B: Substances where Health surveillance is mandatory

Excerpt from WHS Regulation 2013 Schedule 14 as at 8/10/2013

Table 14.1 Hazardous chemicals (other than lead) requiring health monitoring

Column 1	Column 2	Column 3
Item	**Hazardous chemical**	**Type of health monitoring**
1	Acrylonitrile	Demographic, medical and occupational history Records of personal exposure Physical examination
2	Arsenic (inorganic)	Demographic, medical and occupational history Records of personal exposure Physical examination with emphasis on the peripheral nervous system and skin Urinary inorganic arsenic
3	Benzene	Demographic, medical and occupational history Records of personal exposure Physical examination Baseline blood sample for haematological profile
4	Cadmium	Demographic, medical and occupational history Records of personal exposure Physical examination with emphasis on the respiratory system Standard respiratory questionnaire to be completed Standardised respiratory function tests including for example, FEV_1, FVC and FEV_1/FVC Urinary cadmium and β_2-microglobulin Health advice, including counselling on the effect of smoking on cadmium exposure
5	Chromium (inorganic)	Demographic, medical and occupational history Physical examination with emphasis on the respiratory system and skin Weekly skin inspection of hands and forearms by a competent person
6	Creosote	Demographic, medical and occupational history Health advice, including recognition of photosensitivity and skin changes Physical examination with emphasis on the neurological system and skin, noting any abnormal lesions and evidence of skin sensitisation Records of personal exposure, including photosensitivity
7	Crystalline silica	Demographic, medical and occupational history Records of personal exposure Standardised respiratory questionnaire to be completed Standardised respiratory function test, for example, FEV_1, FVC and FEV_1/FVC Chest X-ray full size PA view
8	Isocyanates	Demographic, medical and occupational history Completion of a standardised respiratory questionnaire

		Physical examination of the respiratory system and skin Standardised respiratory function tests, for example, FEV_1, FVC and FEV_1/FVC
9	Mercury (inorganic)	Demographic, medical and occupational history Physical examination with emphasis on dermatological, gastrointestinal, neurological and renal systems Urinary inorganic mercury
10	4,4'-Methylene bis (2-chloroaniline) (MOCA)	Demographic, medical and occupational history Physical examination Urinary total MOCA Dipstick analysis of urine for haematuria Urine cytology
11	Organophosphate pesticides	Demographic, medical and occupational history including pattern of use Physical examination Baseline estimation of red cell and plasma cholinesterase activity levels by the Ellman or equivalent method Estimation of red cell and plasma cholinesterase activity towards the end of the working day on which organophosphate pesticides have been used
12	Pentachlorophenol (PCP)	Demographic, medical and occupational history Records of personal exposure Physical examination with emphasis on the skin, noting any abnormal lesions or effects of irritancy Urinary total pentachlorophenol Dipstick urinalysis for haematuria and proteinuria
13	Polycyclic aromatic hydrocarbons (PAH)	Demographic, medical and occupational history Physical examination Records of personal exposure, including photosensitivity Health advice, including recognition of photosensitivity and skin changes
14	Thallium	Demographic, medical and occupational history Physical examination Urinary thallium
15	Vinyl chloride	Demographic, medical and occupational history Physical examination Records of personal exposure

Table 14.2 Lead requiring health monitoring

Column 1	**Column 2**	**Column 3**
Item	**Lead**	**Type of health monitoring**
1	Lead (inorganic)	Demographic, medical and occupational history Physical examination Biological monitoring

Note. See Section 3.3. of this procedure and Part 7.6 of the WHS Regulation 2011 chapter 7 division 6 for additional requirements for health surveillance and biological monitoring, and WHS Regulation 2011 chapter 7 division 9 part 7.2 in the case of lead risk work.

Appendix B: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals

WHS Regulation 2011 Chapter 7 Division 8 Clause 382: **Using, handling and storing restricted hazardous chemicals**

(1) A person conducting a business or undertaking at a workplace must not use, handle or store, or direct or allow a worker at the workplace to use, handle or store, a restricted hazardous chemical referred to in an item in Schedule 10, table 10.3, column 2 for a purpose referred to in column 3 for the item.

(2) A person conducting a business or undertaking at a workplace must not use, handle or store, or direct or allow a worker at the workplace to use, handle or store, polychlorinated biphenyls (PCBs) unless the use, handling or storage is:

(a) in relation to existing electrical equipment or construction material, or

(b) for disposal purposes, or

(c) for genuine research and analysis.

Excerpt / Tables from WHS Regulation 2013 Schedule 14 as at 8/10/2013: Schedule 10

Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals

Note. The prohibition of the use of carcinogens listed in table 10.1, column 2 and the restriction of the use of carcinogens listed in table 10.2, column 2 apply to the pure substance and where the substance is present in a mixture at a concentration greater than 0.1%, unless otherwise specified.

Table 10.1 Prohibited carcinogens

Column 1	**Column 2**
Item	**Prohibited carcinogen [CAS number]**
1	2-Acetylaminofluorene [53-96-3]
2	Aflatoxins
3	4-Aminodiphenyl [92-67-1]
4	Benzidine [92-87-5] and its salts (including benzidine dihydrochloride [531-85-1])
5	bis(Chloromethyl) ether [542-88-1]
6	Chloromethyl methyl ether [107-30-2] (technical grade which contains bis(chloromethyl) ether)
7	4-Dimethylaminoazobenzene [60-11-7] (Dimethyl Yellow)
8	2-Naphthylamine [91-59-8] and its salts
9	4-Nitrodiphenyl [92-93-3]

Table 10.2 Restricted carcinogens

Column 1	**Column 2**	**Column 3**
Item	**Restricted carcinogen [CAS Number]**	**Restricted use**
1	Acrylonitrile [107-13-1]	All

2	Benzene [71-43-2]	All uses involving benzene as a feedstock containing more than 50% of benzene by volume Genuine research or analysis
3	Cyclophosphamide [50-18-0]	When used in preparation for therapeutic use in hospitals and oncological treatment facilities, and in manufacturing operations Genuine research or analysis
4	3,3'-Dichlorobenzidine [91-94-1] and its salts (including 3,3'-Dichlorobenzidine dihydrochloride [612-83-9])	All
5	Diethyl sulfate [64-67-5]	All
6	Dimethyl sulfate [77-78-1]	All
7	Ethylene dibromide [106-93-4]	When used as a fumigant Genuine research or analysis
8	4,4'-Methylene bis(2-chloroaniline) [101-14-4] MOCA	All
9	3-Propiolactone [57-57-8] (Beta-propiolactone)	All
10	o-Toluidine [95-53-4] and o-Toluidine hydrochloride [636-21-5]	All
11	Vinyl chloride monomer [75-01-4]	All

Table 10.3 Restricted hazardous chemicals

Column 1	**Column 2**	**Column 3**
Item	**Restricted hazardous chemical**	**Restricted use**
1	Antimony and its compounds	For abrasive blasting at a concentration of greater than 0.1% as antimony
2	Arsenic and its compounds	For abrasive blasting at a concentration of greater than 0.1% as arsenic For spray painting
3	Benzene (benzol), if the substance contains more than 1% by volume	For spray painting
4	Beryllium and its compounds	For abrasive blasting at a concentration of greater than 0.1% as beryllium
5	Cadmium and its compounds	For abrasive blasting at a concentration of greater than 0.1% as cadmium
6	Carbon disulphide (carbon bisulphide)	For spray painting
7	Chromate	For wet abrasive blasting
8	Chromium and its	For abrasive blasting at a concentration of greater than

	compounds	0.5% (except as specified for wet blasting) as chromium
9	Cobalt and its compounds	For abrasive blasting at a concentration of greater than 0.1% as cobalt
10	Free silica (crystalline silicon dioxide)	For abrasive blasting at a concentration of greater than 1% For spray painting
11	Lead and compounds	For abrasive blasting at a concentration of greater than 0.1% as lead or which would expose the operator to levels in excess of those set in the regulations covering lead
12	Lead carbonate	For spray painting
13	Methanol (methyl alcohol), if the substance contains more than 1% by volume	For spray painting
14	Nickel and its compounds	For abrasive blasting at a concentration of greater than 0.1% as nickel
15	Nitrates	For wet abrasive blasting
16	Nitrites	For wet abrasive blasting
17	Radioactive substance of any kind where the level of radiation exceeds 1 Bq/g	For abrasive blasting, so far as is reasonably practicable
18	Tetrachloroethane	For spray painting
19	Tetrachloromethane (carbon tetrachloride)	For spray painting
20	Tin and its compounds	For abrasive blasting at a concentration of greater than 0.1% as tin
21	Tributyl tin	For spray painting

Note. Clause 382 deals with polychlorinated biphenyls (PCBs).

WHS Regulation 2011 Chapter 7 Division 8 Clause 383: Application for authorisation to use, handle or store prohibited and restricted carcinogens

(1) A person conducting a business or undertaking at a workplace may apply in writing to the regulator for authorisation to use, handle or store a prohibited carcinogen or restricted carcinogen referred to in Schedule 10 at the workplace.

(2) The application must include the following information:

(a) the applicant's name and business address,

(b) if the applicant conducts the business or undertaking under a business name, that business name,

(c) the name and address of the supplier of the carcinogen,

(d) the address where the carcinogen will be used, handled or stored,

(e) the name of the carcinogen,

(f) the quantity of the carcinogen to be used, handled or stored at the workplace each year,

(g) the purpose and activity for which the carcinogen will be used, handled or stored,

(h) the number of workers that may be exposed to the carcinogen,

(i) information about how the person will manage risks to health and safety, including a summary of the steps taken, or to be taken, by the person in relation to the following:

(i) hazard identification,

(ii) control measures,

(iii) if elimination or substitution of the carcinogen is not reasonably practicable—why the elimination or substitution is not reasonably practicable,

(j) any other information requested by the regulator.

WHS Regulation 2011 Chapter 7 Division 8 Clause 384: Authorisation to use, handle or store prohibited carcinogens and restricted carcinogens

(1) If a person applies under clause 383, the regulator may grant an authorisation to use, handle or store a prohibited carcinogen or restricted carcinogen under this clause.

(2) The regulator may authorise the person to use, handle or store a prohibited carcinogen referred to in an item in Schedule 10, table 10.1 at the workplace only if the carcinogen will be used, handled or stored only for genuine research or analysis.

(3) The regulator may authorise the person to use, handle or store a restricted carcinogen referred to in an item in Schedule 10, table 10.2 at the workplace only if the carcinogen will be used, handled or stored only for a use referred to in column 3 for the item.

(4) The regulator may impose any conditions on the authorisation that the regulator considers necessary to achieve the objectives of the Act or this Regulation.

(5) The regulator must refuse to authorise the use, handling or storage of the carcinogen for a use not referred to in this clause.

Note. A decision to refuse an authorisation is a reviewable decision (see clause 676

Appendix C: Asbestos

WHS Regulation 2011 Chapter 8 Part 8.1 Clause 419 Work involving asbestos or ACM—prohibitions and exceptions (

(1) A person conducting a business or undertaking must not carry out, or direct or allow a worker to carry out, work involving asbestos.

Maximum penalty: (a) in the case of an individual—$6,000, or

(b) in the case of a body corporate—$30,000.

(2) In this clause, work involves asbestos if the work involves manufacturing, supplying, transporting, storing, removing, using, installing, handling, treating, disposing of or disturbing asbestos or ACM.

(3) Subclause (1) does not apply if the work involving asbestos is any of the following:

(a) genuine research and analysis,

(b) sampling and identification in accordance with this Regulation,

(c) maintenance of, or service work on, non friable asbestos or ACM, fixed or installed before 31 December 2003, in accordance with this Regulation,

(d) removal or disposal of asbestos or ACM, including demolition, in accordance with this Regulation,

(e) the transport and disposal of asbestos or asbestos waste in accordance with the Protection of the Environment Operations Act 1997,

(f) demonstrations, education or practical training in relation to asbestos or ACM,

(g) display, or preparation or maintenance for display, of an artefact or thing that is, or includes, asbestos or ACM,

(h) management in accordance with this Regulation of in situ asbestos that was installed or fixed before 31 December 2003,

(i) work that disturbs asbestos during mining operations that involve the extraction of, or exploration for, a mineral other than asbestos,

(j) laundering asbestos contaminated clothing in accordance with this Regulation.

Note. See WHS Regulation 2011 chapter 8 for additional information regarding asbestos, and WHS Regulation 2011 chapter 8 part 8.5 division 1 for health surveillance and biological monitoring requirements

Appendix D: Security Sensitive Dangerous Substances

Security sensitive dangerous substances are prescribed in the *NSW Explosives Regulation 2013*. Refer to the Secure and safe handling of explosives and security sensitive dangerous substances guide for additional information. Security sensitive ammonium nitrate is prescribed as a security sensitive dangerous substance and is any of the following (but does not include ammonium nitrate solutions):

(a) ammonium nitrate that is not a dangerous good of Class 1,

(b) ammonium nitrate emulsions, suspensions or gels containing greater than 45% ammonium nitrate,

(c) ammonium nitrate mixtures containing greater than 45% ammonium nitrate.

A licence is required to possess and use certain formulations of ammonium nitrate for:

- use as a fertilizer in agriculture, horticulture or other primary production
- bio-manufacturing
- education and research.

A commercial laboratory, university or other research institution must not keep/store more than 3kg of security sensitive ammonium nitrate. If they require an amount over the 3kg threshold then a 'Licence to Use SSAN' is required.

To use ammonium nitrate in the manufacture of explosives or for explosive blasting you, or a nominated person on behalf of a company, must have an unsupervised handling licence and either a licence to manufacture explosives or a blasting explosives user's licence.

Authorisation to store or transport ammonium nitrate will only be granted if you meet certain eligibility requirements.

Licence requirements

A licence to store explosives will only be issued if you, or a nominated person on behalf of a company:

- are over 18 years of age
- hold a current unsupervised handling licence
- have a legitimate reason for handling explosives and/or security sensitive dangerous substances
- have made adequate arrangements for the safe and secure handling and storage of explosives and/or security sensitive dangerous substances
- ensure only persons who have an unsupervised handling licence have unsupervised access to explosives and/or security sensitive dangerous substances
- ensure you only supply to persons authorised under the *Explosives Regulation 2005* to receive explosives and/or security sensitive dangerous substances.

Companies must nominate a person, involved in the management of the company, to be responsible for the licence. If the nominated person ceases to be the nominated person for that licence, for example if they resign, the company must nominate another person to take responsibility for the licence within seven days.

You must advise WorkCover of changes to your licence details, as well as any changes to the type, quantity and location of explosives or security sensitive ammonium nitrate within 14 days.

Applying for a licence

You must complete the Application for a *Licence to use security sensitive dangerous substances application form (SSDS)* and take it to an Australia Post office along with:

- a Security clearance application form or copy of your current unsupervised handling licence. The original unsupervised handling licence must be shown to Australia Post when lodging this application;.
- a *National criminal history record check form (P877)* if you do not hold a current unsupervised handling licence;
- proof of identity documents (originals only) showing your name, photo, date of birth, signature and current address to the value of 100 points;
- certified copy of certificate of incorporation or ABN registration showing that the applicant is a registered company (if the application is by a company);
- security plan;
- certified copies of any explosives licences held by the applicant or nominated person;
- *Notification of dangerous goods on premises FDG01* or the *Notification of security sensitive dangerous goods on premises FDG02* and associated fee.

Security plan

You must submit a security plan (including a site plan and schedule) to ensure all explosives and/or security sensitive dangerous substances are held safely and securely. More detailed information and suggested templates for completing a security plan are available in the guide for a *Security plan for storage and handling of explosives*.

WorkCover may suspend or cancel a licence or impose penalties on licence holders who do not comply with the conditions of the licence or requirements in the legislation.

Explosives kept and used at workplaces are subject to the conditions of the *Explosives Act 2003*, the *Explosives Regulation 2005* and the *OHS Regulation 2001*.

More information is contained in the *Using security sensitive dangerous substances GE02: Guide to obtaining a licence* or call 13 10 50.

Appendix E: Explosives and Fireworks

Access to explosives, fireworks and security sensitive dangerous substances is restricted.

WorkCover administers a system of licences and notifications to control and regulate explosives, explosive precursors, fireworks and security sensitive dangerous substances throughout the supply chain. Ammonium nitrate is prescribed in the *Explosives Regulation 2005* as a security sensitive dangerous substance.

WorkCover licence specific activities related to explosives, fireworks and security sensitive dangerous substances including:

- unsupervised handling
- use
- manufacture
- import
- supply
- storage
- transport.

It is an offence to be in possession of, and/or have unsupervised access to, explosives, fireworks and/or security sensitive dangerous substances without the appropriate licence issued by WorkCover.

Licence applicants will need to satisfy WorkCover's licensing criteria and receive a favourable national probity assessment from NSW and Commonwealth police and security agencies.

The *Explosive Act 2003* and *Explosives Regulation 2005* govern the use of explosives and fireworks in NSW. The *Explosives Regulation 2005* requires all activities involving the handling of explosives and fireworks be carried out in accordance with the:

- *AS2187 – Explosives: Storage, Transport and Use*
- *Australian Code for the Transport of Explosives by Road and Rail*
- *Australian Dangerous Goods Code*

You should also refer to the *Guide for the Secure and Safe Handling of Explosives and Security Sensitive Dangerous Substances*.

Appendix F: Chemical Diversion into Illicit Drug Manufacture

The Code of Practice was first developed by PACIA and SIA in partnership with law enforcement bodies in 1994, and is aimed to provide a best practice guide for companies to address prevention of diversion of legitimate industrial chemicals into the illicit drug manufacture.

The Code is updated regularly to reflect latest law enforcement information on trends in illicit drug manufacture, and has been most recently updated in October 2008. Chemicals deemed to be of significant interest for diversion purposes are typically submitted to PACIA by law enforcement with justification for their inclusion into the Code.

Listed chemicals in the code attract controls proportionate to the level of risk for diversion and are categorised into three lists.

- Category I lists attract stringent industry controls, such as the requirement for companies to request End User Declarations from customers seeking to purchase the listed chemicals, and to subsequently forward these declarations to law enforcement in order to analyse potential diversion risks. Cash sales are prohibited for Category I chemicals, and supply of these products is required to be delayed for 24 hours;
- Category II chemicals attract less stringent controls; with; and
- Category III chemicals listed for precautionary purposes only

ILLICIT DRUG PRECURSORS/REAGENTS as at October 2008

CATEGORY I

- Acetic anhydride 108-24-7
- 4-Allylpyrocatechol 2-Hydroxychavicol 1126-61-0
- alpha Phenylacetoacetonitrile alpha Acetyl Phenylacetonitrile 4468-48-8
- 4-Amino-Butanoic acid Piperidinic acid 56-12-2
- Anethole trans - Anethole 4180-23-8
- 104-46-1
- Bromobenzene Phenylbromide 108-86-1
- Bromo safrole 38589-39-8
- Boron tribromide 10294-33-4
- 1,4-Butanediol Tetramethylene Glycol 110-63-4
- 1-Chlorophenyl-2-aminopropane
- Ephedrine (including salts) L-Ephedrine 50-98-6
- Ethyl phenyl acetate Benzene acetic acid, ethyl ester 101-97-3
- Gamma butyrolactone 96-48-0
- Gamma hydroxybutanoic acid
- (including salts) Gamma hydroxybutyric acid
- Hydriodic acid Hydrogen iodide 10034-85-2
- 4-Hydroxybutanal 4-Hydroxybutyraldehyde 5371-52-8
- 2-Hydroxytetrahydrofuran Tetrahydro-2-furanol 1346-46-9
- 4-Hydroxy-butanoic acid lactone Gamma-valerolactone 9648-0
- 4-Hydroxy-butanoic acid nitrile 4-Hydroxybutyronitrile 628-22-8
- 4-Hydroxy pentanoic acid Gamma Valerolactone 108-29-2
- Hypophosphite salts
- Hypophosphorous acid Phosphinic acid 6303-21-5
- Lithium Aluminium Hydride LAH 16853-85-3
- Methcathinone Ephedrone
- 3,4-Methylenedioxy-phenylacetic acid 1,3-Benzodioxolo-5-acetic acid 2861-28-1
- 3,4-Methylenedioxyphenylpropan-2-one 4676-39-5
- N-Methyl ephedrine 552-79-4
- Methyl phenylacetate Benzeneacetic acid, methyl ester 101-41-7
- N-Methylpseudoephedrine 51018-28-1
- Norpseudoephedrine 53643-20-2
- 2-Pyrrolidone Gamma-butyrolactam 616-45-5
- Phenylacetamide 103-81-1
- Phenylacetic acid (including salts) 103-82-2
- Phenylacetonitrile Benzyl cyanide/Benzeneacetonitrile/
- Benzyl nitrile 140-29-4
- Phenylacetyl chloride 103-80-0
- 1-Phenyl-2-bromopropane (+-)-2-Bromo-1-phenylpropane 2114-39-8
- 1-Phenyl-2-chloropropane
- 1-Phenyl-2-iodopropane (2-Iodopropyl)benzene 29527-87-5
- 1-Phenyl-2-nitropropene
- Phenylpropanolamine Norephedrine 37577-28-9
- 1-Phenyl-2-propanone Benzyl methyl ketone, Phenylacetone 103-79-7
- 1-Phenyl-2-propanone oxime
- 1-Phenyl-2-propanol 14898-87-4
- 2-Phenyl-propanal Hydratropic aldehyde 93-53-8
- Phosphorus 7723-14-0
- Phosphorous acid Phosphonic Acid 10294-56-1
- 1-Phenyl-1-Propanone Phenylethylketone, Propiophenone 99-55-0
- Piperonal 3,4-Methylenedioxy-benzaldehyde, Heliotropine 120-57-0
- Pseudoephedrine (including salts)
- Pyridine 110-86-1
- Safrole 5-(2-Propenyl)-1,3-Benzodioxide 94-59-7
- Sassafras oil 8006-80-2
- Sodium bis(2-methoxyethoxy)
- aluminium hydride Sodium dihydrido-bis(2-methoxyethoxy) aluminate 22722-98-1
- Sodium Cyanoborohydride Sodium borocyanohydride 25895-60-7

CATEGORY II

- Acetaldehyde Acetic aldehyde 75-07-0
- trans -Methylstyrene trans-Propenylbenzene 873-66-5
- N-Acetylanthranilic acid 2-Acetamidobenzoic acid 89-52-1
- Allylbenzene 3-Phenyl-1-propene /2-Propenyl Benzene 300-57-2
- Ammonium formate 540-69-2
- Anthranilic acid 2- Aminobenzoic acid 118-92-3
- Benzaldehyde 100-52-7
- 1,3-Benzodioxole 1,2-(Methylenedioxy)benzene 274-09-9
- Benzyl chloride a-Chlorotoluene 100-44-7
- Benzyl bromide a-Bromotoluene 100-39-0
- 5-Bromo-1,3-benzodioxole 4-Bromo-1,2-Methylenedioxybenzene 2635-13-4
- Calcium 7440-70-2
- Chromic acid (including salts)
- Chromium trioxide Chromium(VI) oxide 1333-82-0
- Ergometrine Ergonovine 60-79-7
- Ergotamine 113-15-5
- Ethanamine Monoethylamine 75-04-7
- N-Ethylephedrine
- N-Ethylpseudoephedrine
- Eugenol Phenol, 2-methoxy-4-(2-propenyl)- (9CI) 97-53-0
- Formaldehyde Formalin 50-00-0
- Formamide 75-12-7
- Hydrobromic acid Hydrogen bromide solution 24426-0
- Iodine (including iodide salts) 7553-56-2
- Isosafrole 1,3-Benzodioxole,5-(1-propenyl)- 120-58-1
- Lithium 7439-93-2
- Lysergic acid
- Magnesium 7439-95 4
- Mandelic acid 2-Phenyl-2-hydroxyacetic acid 90-64-2 (DL)
- Mercury Hydrargyrum 7439-97-6
- Mercuric chloride Mercury(II) chloride/Mercury bichloride 7487-94-7
- Methylamine Aminomethane/Monomethylamine 74-89-5
- Methylammonium salts
- N-Methylformamide 123-39-7
- Nitroethane 79-24-3
- Nitromethane
- Palladium (including salts)
- Phenylalanine
- Piperidine 110-89-4
- Platinum Nil 7440-06-4
- Potassium 7440-09-7
- Propionic anhydride 123-62-6
- Raney nickel 12635-29-9
- Sodium Borohydride 45288-2
- Sodium 7440-23-5
- Thionyl chloride 7719-09-7
- Thorium (including salts)
- Hydrogen sulfide 7783-06-4
- Hydrogen chloride 7647-01-0
- Hydrogen 1333-74-0
- Ammonia 7664-41-7
- Methylamine 74-89-5

CATEGORY III

- Acetic acid Glacial Acetic Acid/ Ethanoic Acid 64-19-7
- Acetone 2-Propanone 67-64-1
- Acetonitrile Methylcyanide 75-05-8
- Acetyl chloride 75-36-5
- Chloroform Trichloromethane 67-66-3
- Cyclohexanone Sextone 108-94-1
- Diethyl ether Ethyl ether/ Ether 60-29-7
- Formic acid 64-18-6
- Hydrochloric acid Muriatic acid/ Hydrogen chloride solution 7647-01-0
- Methylated Spirits Ethanol 64-17-5
- Methyl ethyl ketone MEK/ 2-Butanone 78-93-3
- Phosphorus pentachloride Phosphorane pentachloride 10026-13-8
- Phosphorus pentoxide Phosphoric pentoxide/ Phosphorus oxide 1314-56-3
- Phosphoric anhydride
- Phosphorus trichloride Phosphorus chloride 7719-12-2
- Potassium cyanide 151-50-8
- Potassium permanganate 7722-64-7
- Sodium acetate Acetic Acid, sodium salt 127-09-3
- Sodium cyanide 143-33-9
- Sodium hydroxide Caustic soda 1310-73-2
- Sulfuric acid 7664-93-9
- Tetrahydrofuran 109-99-9
- Toluene Methyl benzene / Toluol 108-88-3

Appendix G: Class and Schedule Definitions

Dangerous Goods Class

- Class 1 - Explosives
- Class 2 - Gases
- Class 3 - Flammable liquids
- Class 4 - Flammable solids
- Class 5 - Oxidisers
- Class 6 - Poisons / Toxins
- Class 7 - Radioactive substances
- Class 8 - Corrosives
- Class 9 - Miscellaneous

Appendix H: Scheduled Drugs and Poisons

This is a guide only and should be used in conjunction with the Poisons and Therapeutic Goods Act 1966 and the Poisons and Therapeutic Goods Regulation 2008.

Poisons are divided into schedules; schedule 1 is currently not in use so is not included below. Scheduling is a national classification system that controls how medicines and chemicals are made available to the public. Medicines and chemicals are classified into Schedules according to the level of regulatory control over the availability of the medicine or chemical, required to protect public health and safety. The Schedules are:

- Schedule 2 Pharmacy Medicine
- Schedule 3 Pharmacist Only Medicine
- Schedule 4 Prescription Only Medicine OR Prescription Animal Remedy
- Schedule 5 Caution
- Schedule 6 Poison
- Schedule 7 Dangerous Poison
- Schedule 8 Controlled Drug
- Schedule 9 Prohibited Substance

The Schedules are published in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) and are given legal effect through state and territory legislation.

SCHEDULE 2

Substances which are hazardous if misused or carelessly handled but which are available for therapeutic or other purposes without undue restriction.

Store and handle according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008

Can only be supplied to Scientifically qualified persons as per Appendix C, Clause 19 of the Poisons and Therapeutic Goods Regulation 2008

SCHEDULE 3

Pharmacist only Substances

Store according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008 in a lockable facility such as cabinet, refrigerator or room and maintain records.

Handle according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008

Can only be supplied to Scientifically qualified persons as per Appendix C, Clause 19 of the Poisons and Therapeutic Goods Regulation 2008

SCHEDULE 4

Restricted Substances. Prescription only medicine

The possession and use of Schedule 4 drugs is regulated and restricted to authorised persons as designated by the Pharmaceutical Services Branch of the NSW Department of Health (PSB).

Store according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008 in lockable facility such as cabinet, refrigerator or room and maintain records

Any thefts or losses must be notified to Health and Safety and the licence holder must also notify the police or Dept of Health.

Handle according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008

Can only be supplied to Scientifically qualified persons as per Appendix C, Clause 19 of the Poisons and Therapeutic Goods Regulation 2008

SCHEDULE 5

Poisonous substances of a dangerous nature commonly used for domestic purposes which are readily obtained but which require caution in their handling, use and storage

Store according to MSDS

SCHEDULE 6

Substances which are readily available for agricultural, veterinary, photographic, industrial purposes.

Store according to MSDS

SCHEDULE 7

Substances of exceptional danger which require special precautions in their manufacture and use

Store according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008 in lockable facility such as cabinet, refrigerator or room and maintain records.

Store separately to other poisons

Any thefts or losses must be notified to Health and Safety and the licence holder must also notify the police or Dept of Health

Handle according to MSDS and the requirements outlined in the Poisons and Therapeutic Goods Regulation 2008

Can only be supplied to Scientifically qualified persons as per Appendix C, Clause 19 of the Poisons and Therapeutic Goods Regulation 2008, In addition, certain S7 substances as listed in the SUSMP, may also be supplied and used by a person in charge of an institution or facility for scientific research, instruction, analysis or study as per supply conditions prescribed in Part 2 Division 4, Clause 20, sub clause 8c.

SCHEDULE 8

Drugs of Addiction

The possession and use of Schedule 8 drugs is prohibited (i.e. illegal) without written authority from the PSB.

Substances which are, or potentially are, addictions producing and where possession, supply, prescribing and use are strictly limited

Any thefts or losses must be notified to Health and Safety and the licence holder must also notify the police (via Security) or Dept of Health

Gaining authorisation

Before you can order, store or use S8 drugs you need to obtain authorisation from the Health Dept. Head of School/Division must obtain/hold a license and staff in that area planning to use S8 drugs must apply to the Health Dept in writing in order to be included under the HOS/HOD's authorisation.

Storage

A person who is authorised to possess S8 drugs must keep:

-the drug stored apart from all other goods in a separate room, safe, cupboard or other receptacle securely attached to a part of the premises and kept securely locked when not in immediate use.

-All S8 storage locations must be recorded with Health and Safety and on the manifest

Records of Use

The authorised person must maintain a drug register where they record in hardcopy form:

-date of use

-name, form, strength and quantity of poison

-name of person/process/animal where poison is transferred, supplied, administered or disposed of

-name and address of person who supplied the poison

-all entries must be signed

Disposal

A person who is authorised to be in possession of a drug of addiction must not wilfully destroy the drug or allow the drug to be destroyed.

The disposal of any expired, excess or unrequired S8 drugs should be arranged with Health and Safety.

SCHEDULE 9

Prohibited Substances

These substances (Illicit drugs) are usually sourced from the Australian Federal Police or the NSW Government Drug Srvices Unit. If S9 material is to be imported an import permit licence is required from the NSW Government Drug Services Unit.

These substances may only be used for strictly controlled special uses for which a permit from the NSW Health Director General is required. Conditions of purchase, storage (double locked restricted access) and use are stricter than those for Schedule 8.

Any thefts or losses must be notified to Health and Safety and the licence holder must also notify the Police (via Security) or Dept of Health

Appendix I: Dangerous Goods Placard and Manifest Quantities

Group	Description of dangerous goods	Packing Group	Placarding quantity	Manifest quantity
1	Class 2			
	Class 2.1	Not Applicable	500 L	5,000 L
	Class 2.2 Subsidiary Risk 5.1	Not Applicable	2,000 L	10,000 L
	Other Class 2.2	Not Applicable	5,000 L	10,000 L
	Class 2.3	Not Applicable	50 L	500 L
	Aerosols	Not Applicable	5,000 L	10,000 L
	Cryogenic Fluids	Not Applicable	1,000 L	10,000 L
2	Class 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1 or 8	I	50 kg or L	500 kg or L
		II	250 kg or L	2,500 kg or L
		III	1,000 kg or L	10,000 kg or L
		Mixed Packing Groups in a single Class with the quantity of each Packing Group below the specified quantity for the Packing Group.	1,000 kg or L	10,000 kg or L
3	Class 9	II	1,000 kg or L	10,000 kg or L
		III	5,000 kg or L	10,000 kg or L
		Mixed Packing Groups in Class 9 with the quantity of each Packing Group below the specified quantity for the Packing Group.	5,000 kg or L	10,000 kg or L

Group	Description of dangerous goods	Packing Group	Placarding quantity	Manifest quantity
4	Mixed Classes of dangerous goods where none of the Classes, types or Packing Groups (if any) present exceeds the quantities specified for the relevant quantity in Item 1, 2 or 3 of this Table.	Not Applicable	5,000 kg or L—The quantity applies only if the placarding quantity for an individual Class that is present is 5,000 kg or L.	10,000 kg or L
			2,000 kg or L—The quantity applies only if the placarding quantity for all of the Classes present is 2,000 kg or L or less.	
5	C1 combustible liquids stored and handled with fire risk dangerous goods where none of the Classes, types or Packing Groups (if any) present exceeds the relevant quantities in Item 1, 2 or 3 of this Table.	Not Applicable	1,000 kg or L	10,000 kg or L
6	Goods too dangerous to be transported that are not kept in a laboratory.	Not Applicable	Any quantity	Any quantity

Group	Description of dangerous goods	Packing Group	Placarding quantity	Manifest quantity
7	C1 combustible liquids in bulk stored and handled separately from other dangerous goods.	Not Applicable	10,000 L	100,000 L
	C1 combustible liquids stored and handled in packages separately from other dangerous goods.	Not Applicable	50,000 L	100,000 L
	C1 combustible liquids in bulk and in packages stored and handled separately from other dangerous goods provided the quantity in bulk is 10,000 L or less.	Not Applicable	50,000 L	100,000 L

Note: For the purposes of item 3 in the Table, where Class 9 dangerous goods do not have a Packing Group assigned to them, they are deemed to be assigned to Packing Group III.

Appendix J: Placarding Signage Requirements

Outer Warning Placarding

The signs shall be red letters on white in the dimensions shown.

Figure 1: Outer Warning Sign Dimensions

Dangerous Goods in Bulk

The placarding shall be as follows:

- in space (p) in Figure 2 (below)the name proper shipping name;
- space (q) in Figure 2 the UN number;
- space (r) in Figure 2 the Hazchem Code for the dangerous goods specified in the ADG code; and
- in space (s) in Figure 2, the class label and Subsidiary Risk label, if any.

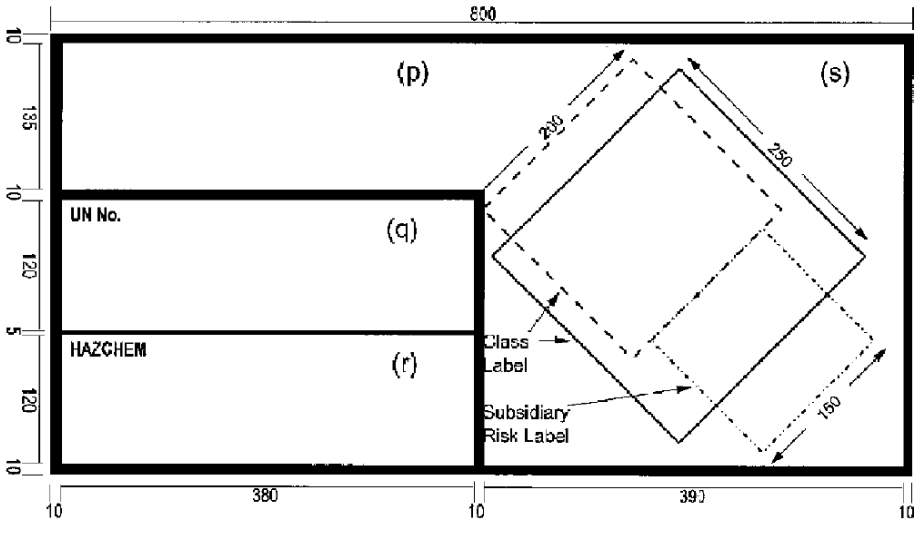
For goods to dangerous to transport refer the Code of Practice for the Storage and Handling of Dangerous Goods.

Notes.

1) The numerals and letters used for showing the proper shipping name or name of the goods, UN Number and Hazchem Code must be:

- black on a white background, except where a letter of the Hazchem Code is white on a black background, and
- at least 100 mm high, except where the proper shipping name requires 2 lines to be used, in which case the lettering must be at least 50 mm high.

2) An Emergency Information Panel of a size and layout in accordance with the ADG Code for the dangerous goods that contains the information listed above may be used as a placard for a storage of dangerous goods in bulk instead of the one detailed in Error! Reference source not found.



Fi

Figure 2: Bulk Storage Placarding

Placarding for Packaged Dangerous Goods

For all areas that store Dangerous Goods in packages in quantities exceeding those listed in the **Placarding Column** of Appendix the following apply:

The placard shall be of sufficient size to accommodate the labels to be displayed on it with a white background in the dimensions shown.

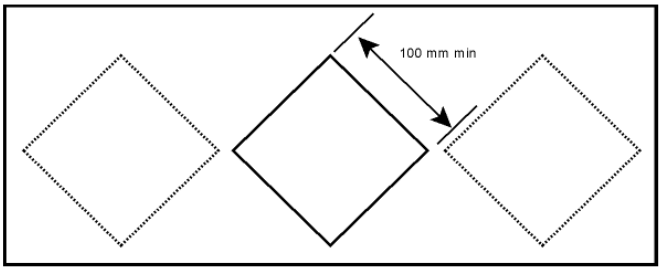


Figure 3: Placard Dimensions

The placard shall include:

- A Class label for each Class of dangerous goods present in a quantity that exceeds the “Placarding quantity”; and
- If the total quantity of mixed Classes of dangerous goods exceeds the mixed Classes quantity specified in Item 4 of the Table
- A Class label for each Class of dangerous goods present that exceeds 50% of the quantity specified for the Class: or
- If no other Class label is required, a mixed Class label: and
- For C1 combustible liquids and fire risk dangerous goods in an aggregate quantity exceeding 1,000 L— a Class 3 Class label.

Appendix K: Relevant Guidance and Standards

NSW OHS Regulation 2001

Code of Practice for the Storage and Handling of Dangerous Goods

Control of workplace hazardous substances: Code of practice

Labelling of workplace substances: Code of practice

Code of Practice for Supply Diversion into Illicit Drug Manufacture - Australian Crime Commission

AS/NZS 1596:2008	The storage and handling of LP Gas
AS 1894-1976	Code of Practice for the Safe Handling of Cryogenic Fluids
AS 1940-2004	The Storage and Handling of Flammable and Combustible Liquids
AS 2243	Safety in Laboratories
AS 2022-2003	Anhydrous Ammonia - Storage and Handling
AS 2030.1-2009	Gas Cylinders – General Requirements
AS 2187	Explosives - Storage, Transport and Use
AS 2507-1998	The Storage and Handling of Pesticides
AS 2508	Safe Storage and Handling Information Cards for Hazardous Materials
AS 2714-2008	The storage and handling of organic peroxides
AS 2927-2001	The Storage and Handling of Liquefied Chlorine Gas
AS 3780-2008	The Storage and Handling of Corrosive Substances
AS 3833-2007	The Storage and Handling of Mixed Classes of Dangerous Goods in Packages and Intermediate Bulk Containers
AS 3961-2005	The storage and handling of liquefied natural gas
AS 4081-1993	The Storage and Transport of liquid and liquefied Polyfunctional Isocyanates
AS 4326-2008	The Storage and Handling of Oxidizing Agents
AS 4332-2004	The storage and handling of gases in cylinders
AS/NZS 4452-1997	The Storage and Handling of Toxic Substances
AS 4681-2000	The Storage and Handling of Class 9 (Miscellaneous) Dangerous Goods and Articles
AS 4710-2001	Packages for Chemicals Not Intended for Access or Contact with Their Contents by Humans

General Guidelines for Minor Storages (Minor storages are those less than the Placarding quantity in **Appendix I: Dangerous Goods Placard and Manifest Quantities** follow:

General Minor Storage.

- No heating or ignition sources
- Adequate ventilation
- Dangerous good kept closed when not in use
- Spill retention measures
- Transport is done in a safe manner
- PPE worn when handing substance
- Fire extinguisher of suitable type along an exit route
- Special storage conditions

Class 2 (Gases) – refer to AS 1894

- Gas name label on shoulder of each cylinder is clearly legible
- Cylinders secured to the wall or trolley by brackets or chains.
- Fuel cylinders separate from oxidising cylinders
- Empty cylinders separate from full cylinders and clearly identified
- Indoor gases stored a minimum of 5 meters away from other dangerous goods in a well ventilated area
- Are cylinders clear of artificial sources of heat
- Cylinder valve closed when cylinder not in use

Class 3 (Flammable liquids) – refer to AS 1940

- No ignition sources
- Safe entry to and exit from all working locations
- All chemical containers clearly labelled
- Procedures in place for the handling of specialty chemicals
- Packages kept closed when not in use
- Spill kit present
- Flammables cabinet used to store flammables if not a specifically designed store
- Safety storage and dispensing cans used for all temporary storages. (No plastic containers)
- Correct signage in place

Class 8 (Corrosive) – refer to AS 3780

- Packages not kept near incompatible substances
- Packages kept away from class 3 substances
- Packages kept away from heat sources
- Packages kept closed when not in use
- Spill kit present
- Appropriate PPE worn

Appendix L: Sample Dangerous Good – Hazardous Substance Risk Assessment Form

Area	**Date of Risk**
	Review due:

Assessed By	
Print Name	**Signature**

Authorised By	
Print Name	**Signature**
Date:	

Description:
Quantity stored / used:
Scale of use: Minor / Laboratory /Industrial process
Exposed: Continuously / Intermittently / during spills / during maintenance

For the hazard prompts listed over the page tick the ones relevant to this Store, depot/ chemical / process / activity. Transfer the Ticked items to the risk assessment form and complete the risk assessment. Also transfer any Risk Phrases from the MSDS to the Risk Assessment Hazards and detail the controls for them. ChemWatch may be suitable for Hazardous Substance Assessments.

Dangerous Goods	
Issue	**Relevant?**
• Can the Dangerous Goods have an effect on Public Health and Safety?	□
• Can the DG becoming unstable, decompose or change creating a different hazard or increased risk?	□
• If stabilisers are required, are controls needed to maintain levels in accordance with manufactures requirements?	□
• If DG are to be handled or stored within a particular temperature range, are controls needed to maintain levels in accordance with manufactures requirements?	□
• Is there a risks of the DGs on other DG storages or to persons or property beyond the premises?	□
• Are DGs not compatible with other substances?	□
• Is there a risk of ignition sources in potential hazardous areas?	□
• Is this a hazardous area? (Explosion risk)	□
• Is there potential atmospheric emissions that are toxic, corrosive, flammable, explosive or asphyxiant?	□
• Is contamination of, food packaging or personal use products possible?	□
• Are the foundations and supports for bulk containers and associated pipe work critical?	□
• Is there excessive stress on the DG containers by the connected pipe work or equipment possible?	□
• Are DG containers and associated pipework	□

Dangerous Goods	
Issue	**Relevant?**
susceptible to deterioration? (12 monthly inspections)	
• Is there a risk of leaks or spills from the storage or handling of the DGs?	□
• Are incompatible DG's stored in the same containment area?	□
• Is immediate action to be taken in the case of a spill or leak?	□
• Is cleanup and disposal of DG or effluent following a leak or spill required?	□
• Are their risks of transfer of DG's within, to and from the premises?. (This to include spill and leak control, static electricity, vapour generation, suitability of pipe work, attachments and associated safety systems.)	□
• Are DG storages susceptible to physical damage from activities on site including impacts, imposed loads and mechanical stress?	□
• Is a fire protection system needed / suitable for the storage and handling of DG's on site and other materials stored or handled?	□
• Is safe means of access and egress required?	□
• Are there security risks of access to Dangerous Goods by unauthorised persons or unauthorised activities?	□
• Is lighting for Dangerous Goods facilities inadequate for persons to move safely and facilitates safe access and egress does it create excessive glare or reflection?	□

Hazardous Substances	
Issue	**Relevant?**
• Flammable?	☐
• Corrosive?	☐
• Toxic?	☐
• Carcinogenic	☐
• Oxidising?	☐
• Mutagenic?	☐
• Teratogenic?	☐
• Explosive?	☐
• Noxious?	☐
• Irritant?	☐
• Health surveillance required? Refer Section 3.3.	☐
• Is this a prohibited use? Refer Appendix	☐
• Training?	☐
• Spill control / cleanup?	☐
• Storage?	☐
• Are neutralisers / antidotes required (e.g. HF)	☐
• Are gas cylinders used inside? (Mandatory gas monitors required)	☐
• Can alternative lower risk substances be used?	☐

Environment	
Issue	**Relevant?**
• Is the substance environmentally sensitive?	☐
• Are there licence conditions covering this substance?	☐
• Are their special disposal condition?	☐

2	Hazard	Potential Consequences	Existing Controls / Assumptions.	RR	Additional Controls	RRR	Control Type	Action
□ **Dangerous Goods**								
	•							
	•							
	•							
	•							
	•							
	•							
	•							
	•							
	•							
	•							

2	Hazard	Potential Consequences	Existing Controls / Assumptions.	RR	Additional Controls	RRR	Control Type	Action
□ **Hazardous Substances**								
	•							
	•							
	•							
	•							
	•							
	•							
	•							
	•							
	•							
	•							

Other Requirements	
List the Qualifications required to use / store / transfer / dispose of the substance.	
List the Training required to use / store / transfer / dispose of the substance.	
List the Permits, Certificates, WorkCover Approvals required to use / store / transfer / dispose of the substance.	
List the Codes of Practice, Legislation and any applicable standards which pertain to the chemical.	
List the Plant / Equipment that will be used with the chemical.	
List the Maintenance Checks for Plant and Equipment.	

Control Types List

Abbrev	**Control Description**
ELI	Eliminate
SUB	Substitute with the safer chemical
REM	Remove the hazard by the use of alternate means
SEP	Separate persons from the hazard e.g. guards, barriers, covers
ENG	Engineering solution e.g. fume cupboard
PRO	Generic procedure and training or SWP
PPE	Personal protective equipment

Action List

Abbrev	
SWP	Include in Safe Work Procedure
INV	Further investigation required
HDWR	Implement hardware change
PRO	Implement procedural change