

Hazardous Substances Standard

Last Update: 4 January 2019
Owner: Health Wellbeing and Safety (HR)

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Templates:

- [Dangerous Goods / Hazardous Substances Register](#)
- [Hazardous Substances Risk Assessment for individual materials](#)
- [Hazardous Substances Risk Assessment for a process](#)
- [Hazardous Substances and Dangerous Goods Training Record](#)

1. Recommended Compliance Procedure

To comply with Part 4.1 (Hazardous Substances) of the [Occupational Health and Safety Regulations](#), managers must follow the following compliance procedure:

Methodology	Resources / Tools
Step 1: Obtain a copy of the Hazardous Substances Compliance Code.	Download a copy from WorkSafe
Step 2: Nominate a Chemical Safety Officer to co-ordinate the compliance program.	Where faculty/institute/division uses, disposes of or stores more than 20 kilograms of hazardous chemicals over a calendar year
Step 3: Conduct a survey of all chemicals	Record the name and location of any chemical that is marked “hazardous” or has a health warning label (toxic, corrosive, irritant , sensitiser etc)
Step 4: Create a Register of Hazardous Substances and Dangerous Goods	See Dangerous Goods (and Hazardous Substances) Register .
Step 5: Obtain Safety Data Sheets (SDS) for all Hazardous Substances	For all identified and suspected Hazardous Substances, obtain SDS from supplier or use ChemWatch . The SDS must be less than 5 years old ChemWatch must be readily accessible.
Step 6: Label all containers of Hazardous Substances	Containers into which substances have been decanted must be correctly labelled

Methodology	Resources / Tools
<p>Step 7: Assess and document the risk arising from each identified hazardous substance. Work through control measures using the Hierarchy of Control to identify and prioritise control measures</p>	<p>See Hazardous Substances Risk Assessments (for individual chemicals and processes) and Chemical Work Safety Assessment (for Research). Risk assessments must be reviewed when new materials are used, processes change, changes occur in the MSDS or at least every five years The hazard identification, risk assessment and control process should be undertaken in consultation with users of the chemicals and the relevant Health and Safety Representative (HSR)</p>
<p>Step 8: From the above, determine whether atmospheric monitoring or health surveillance is required (preferably eliminate substances and procedures in which such monitoring would be required).</p>	<p>Monitoring may be required if you are not sure whether the exposure standard may be exceeded, or if you cannot determine the risk to health with confidence by simply reviewing the available information and the nature of the work. Consult the SafeWork Australia Standards for Atmospheric Contaminants in the Occupational Environment</p>
<p>Step 9: Health surveillance may also be required where staff are exposed to certain substances or under certain workplace conditions</p>	
<p>Step 10: Develop Safe Working Procedures and associated documents</p>	<p>See Safe Work Practices</p>
<p>Step 10: Ensure that staff, supervisors, students, contractors have received sufficient information, instruction and training to handle these substances.</p>	<p>See Hazardous Substances and Dangerous Goods Training Record Form Records must be kept five years Train staff and supervisors so that they have an appreciation of the hazards involved and why the controls are necessary. Ensure refresher and induction training is also provided.</p>
<p>Step 11 - Ensure staff, supervisors, students, contractors can demonstrate competencies with regard to safe work practices</p>	<p>Provide appropriate levels of supervision especially with new workers: do not assume prior learning.</p>
<p>Step 12: Carry out regular reviews of risk control measures</p>	<ul style="list-style-type: none"> • to monitor implementation • to ensure their effectiveness, • when there are changes to products or procedures, • at least every 5 years.

2. Hazardous Substance Criteria

The criteria for classifying hazardous substances are based on the potential to cause acute and chronic health effects. The following categories (and levels of severity) are included in the criteria for hazardous substances:

Hazardous Classification	Sub-classifications
<p>Acute lethal effects:</p>	<p>Very Toxic substances / Toxic substances / Harmful substances</p>
<p>Non-lethal effects after a single exposure</p>	<p>Very Toxic substances / Toxic substances / Harmful substances</p>

Hazardous Classification	Sub-classifications
Severe effects after prolonged or repeated exposure	Toxic substances, and Harmful substances
Corrosive substances	Very corrosive / Corrosive (packaging group II & III)
Irritant substances	Skin, Eyes and Inhalation
Sensitising substances	Skin and Inhalation
Carcinogenic substances See Carcinogen Guidelines	Category 1 (known human carcinogens) Category 2 (suspected human carcinogens) Category 3 (causing cancer in experimental animal, but inconclusive human evidence)
Mutagenic substances (Mutagen means a substance capable of causing genetic damage)	Category 1, 2 and 3
Teratogenic substances (Teratogen means a substance capable of causing abnormalities to the foetus)	Category 1 and 2

For the purposes of Part 4.1 (Hazardous Substances) of the [Occupational Health and Safety Regulations](#), Hazardous Substances are defined as those:

- on Safe Work Australia's [List of Designated Hazardous Substances](#) or which
- meet the Safe Work Australia's [Classifying Hazardous Substances](#)

A Hazardous Substance is any substance that has the potential to harm human health. There is no minimum legislative quantity. The determination of whether a material is hazardous is the responsibility of the supplier/manufacturer. When University staff or students make up a solution or create a new chemical that is kept for more than a day, then the University becomes the manufacturer.

3. Chemical Safety Officer

The dean, head of school or director will nominate a Chemical Safety Officer where a faculty/school / institute or division (department) uses, disposes of or stores more than 20 kilograms of hazardous chemicals over a calendar year,

The Chemical Safety Officer coordinates the faculty, school or divisional compliance program. The Chemical Safety Officers are responsible for:

- advising the department manager concerning local compliance with legislation and providing managers, staff, students and others with advice on chemical management
- ensuring that when supervisors notify them of hazardous substances, those substances are entered on the register of hazardous substances;
- maintaining and regularly updating the budget centre's register(s) of hazardous substances.
- ensuring that each hazardous substance used, stored and (where applicable) produced by the department for supply has a current Safety Data Sheet (SDS) which must be readily available (within a few minutes).
- ensuring that any substance that a staff member or researcher imports directly from outside Australia into the department is accompanied by an SDS from the supplier and is entered on the register. Imported substances need to be classified according to Safe Work Australia's [Classifying Hazardous Substances](#).
- advising and discussing with staff health risks peculiar to individual circumstances (for example, pregnancy)
- ensuring all chemical incidents or accidents are [reported](#)
- the investigation together with local supervisor and OHS representative of any incidents involving chemicals

- initially reviewing applications or proposals to carry out work using hazardous substances and dangerous goods
- ensuring facilities, stores and containment arrangements are regularly inspected and reviewing inspection reports
- maintaining any records or processes associated with health surveillance or workplace monitoring. Records must be maintained for 30 years.

The Chemical Safety Officer must be aware of legislation covering the purchase, use, storage, transport and disposal of hazardous substances, dangerous goods, carcinogens and poisons.

The Chemical Safety Officer will suspend any activity involving substances or processes in which there is an excessive or uncontrolled risk to any persons or where there is a breach of the legislation.

4. ChemWatch

The University has a licence for [ChemWatch](#) which is a web-based chemical management system.

5. Labelling

Containers of hazardous substances must be labelled with the manufacturer's or importer's label. These labels must remain legible and must not be removed, defaced or altered.

Where hazardous substances are decanted into container that will be kept for longer than the process it is being used in, it must be labelled. The unlabelled container must not be left unattended. All containers of hazardous substances must be labelled with:

- Product name
- Name, address, phone no. of Australian manufacturer or importer
- Ingredients, if applicable
- Risk phrases
- Safety phrases
- HAZARDOUS or words that indicate the severity of the hazard, e.g. dangerous poison, warning, caution

If the container is too small for all elements to be included, then the minimum required on the label is the Product name. Where practicable, the container should be labelled with the appropriate risk and safety phrases also.

6. Safety Data Sheets

Safety Data Sheets (SDSs) must be readily available to the users of hazardous substances. This is best achieved for frequently used substances having a short form printed copy in the laboratory. Alternatively safe working procedure if kept in the laboratory can hold this information. The short form must include emergency information (first aid, toxicity, emergency response). For all hazardous substances ready access through [ChemWatch](#) must be available within 2 minutes. This means all users of hazardous substances must know how to find information quickly.

7. Hierarchy of Controls

When considering control measures to ensure the safe use of hazardous substances, the hierarchy of controls must be considered.

Elimination	eg: the substance is too dangerous to store or use, or suitable methods to control staff exposure are not practicable.	
Substitution	eg: a less dangerous chemical can be used to give the same result	
Isolation	eg: the process can be automated so that there is no risk of human contact	
Engineering Controls	eg: the work will be carried out in a well maintained fume cupboard	
Administrative Controls Supervision	eg: limiting the exposure of one person by using several people to carry out the task or by other means of such as reducing the time that the person is exposed to the substance	
Personal Protective Equipment	eg: the use of safety glasses, masks, respirators, gloves, lab coats etc to minimise the exposure of the operator.	

Risk Controls

Safety Measure (in order of hierarchy)	Explanation and Examples
Elimination	Eliminate the use of the substance. Example: <ul style="list-style-type: none"> using a physical process instead of a chemical process eg.using ultrasound to clean equipment instead of a process involving chemicals
Substitution	Use a safer substance or a safer form of the substance. Examples: <p><i>safer substance</i></p> <ul style="list-style-type: none"> Using detergent instead of chlorinated solvent for cleaning Using water-based chemicals instead of solvent-based chemicals where compatible <p><i>safer form or process</i></p> <ul style="list-style-type: none"> Painting with brush instead of spraying Purchasing a substance in a safer form (e.g. using pellets instead of powder which reduces dust. Using liquids in ready to use form instead of concentrates which require decanting or mixing)
Isolation	Separate people or property from the substance by distance or barriers. Examples: <ul style="list-style-type: none"> Using closed systems such as automatic titration or working in glove box Fully or partially enclosing the process with exhaust extraction Isolating the process to one room with restricted access or using appropriate barriers/screens to separate substances Moving the process into a positive pressure cabin or room Distancing workers from substances/processes through the use of remote controls Distancing property, non compatible chemicals and ignition sources from goods

Safety Measure (in order of hierarchy)	Explanation and Examples
Engineering	<p>Physical controls (such as plant/equipment) that eliminate or reduce substances being produced, stop or contain substances, or limit the area of contamination in the event of spills and leaks.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Using fully enclosed ventilation booths • Using partially enclosed, ventilated spray booths • Using local exhaust or natural ventilation systems • Using robots • Designing buildings that are: compatible with the intended goods; made of non-combustible construction as far as practicable; and designed to reduce contamination • Using bunding to reduce spillage • Installing drains, tanks or sumps to cope with spilled material • Installing automatic fire protection and chemical suppression systems
Administrative	<p>Using safe work practices including good housekeeping. Examples:</p> <ul style="list-style-type: none"> • Reducing the amount of property or the number of employees exposed • Reducing the duration and/or frequency of exposure • For dangerous goods reducing the amount of goods stored and used • ensuring safe interim storage of wastes • Vacuuming or wet sweeping to suppress dust being generated • Covering containers and making sure lids are attached • Cleaning up spills immediately • Ensuring no eating, drinking or smoking in areas where substances are used • Providing suitable washing facilities • Providing first aid facilities • Instructing staff how to use substances/equipment safely
Supervision	<ul style="list-style-type: none"> • Set the level of supervision in light of the risk and the skills of the persons carrying out the work
Personal protective equipment (PPE)	<p>Protective clothing and equipment for employees, supervisors and visitors. Examples:</p> <ul style="list-style-type: none"> • Overalls • Aprons/gowns • Footwear • Gloves • Chemical resistant glasses (safety glasses) • Face shields • Respirators • head protection

8. Training and Induction

The induction, information and training provided must include the following.

- Labelling of containers of hazardous substances, information included on each part of the label and why the information is provided.
- How to locate and use an MSDS and the information contained in each part of the MSDS.
- The nature of the hazards and properties of the Hazardous Substances to which staff are or may be exposed including routes of entry into the body and potential health risks.
- Work practises to be followed when using, handling, storing, cleaning up and disposing of Hazardous Substances.
- Measures used to control exposure to Hazardous Substances including the correct use and maintenance of these controls.
- Proper use, fitting and maintenance of personal protective equipment (PPE).
- Emergency procedures, including evacuation and special decontamination procedures.
- First aid and incident reporting procedures to be followed in the case of injury or illness.

- Reasons for air monitoring (if required), type of monitoring used and how to find out the results of monitoring.
- Reasons for health surveillance (if required) and the type of surveillance used.

This training must be provided to staff, students, contractors or volunteers working with or in the proximity of Hazardous Substances.

Refresher and induction training is also required.

9. Scheduled Hazardous Substances – Health Surveillance

Specific hazardous substances which you need to report are listed [in column 1 of schedule 3 in the NOHSC National Model Regulations for the Control of Workplace Hazardous Substances](#). WorkSafe may determine further hazardous substances which require a health surveillance report. Safe Work Australia’s Appendix E of [Managing risks of hazardous chemicals in the workplace Code of Practice](#) provides further information on health surveillance.

Health surveillance is arranged through the [HWS Unit](#).

Scheduled Substances	Substances recommended for Health Surveillance
<ul style="list-style-type: none"> • acrylonitrile • asbestos • crystalline silica • isocyanates; • 4,4’ – methylene bis 2–chloroaniline (MOCA); • organophosphate pesticides; • vinyl chloride. 	<ul style="list-style-type: none"> • inorganic arsenic • benzene • cadmium • inorganic chromium • creosote • inorganic mercury;pentachlorophenol (PCP) • polycyclic aromatic hydrocarbons (PAH) • thallium

10. Other Supporting Documents

- Safe Work Australia - [Hazardous Substances Information System](#)
- Worksafe Victoria - [A step by step guide for Managing chemicals in the workplace](#)
- Safe Work Australia - Code [of Practice: Managing risks of hazardous chemicals in the workplace](#)
- WorkSafe Victoria – [Hazardous Substances Compliance Code](#)