

HAZARDOUS CHEMICALS PROCEDURE

1. Introduction

This procedure sets out the minimum requirements that shall be followed when managing hazardous chemicals in the workplace, whilst detailing the necessary precautions that shall be taken by all personnel to minimise their exposure to the hazards that may arise during use.

2. Identifying requirements

Hazardous chemicals in the workplace can put people at risk of injury or serious illness. A wide variety of man-made and natural chemicals are used in the workplace including petrochemicals, solvents, acids, pesticides and herbicides, as well as more common products such as: cleaners, detergents and paint.

These substances can put people at risk if they are used incorrectly.

Risk levels can vary according to the chemical. Some chemicals may cause irritation, allergic reactions or sensitivities and some may be flammable, corrosive or explosive. In extreme cases, some chemicals can cause sickness and even death. Some may put users at risk months or years after the initial exposure. An example of this is people who were exposed to asbestos decades ago are now tragically suffering from this exposure.

Hazardous chemicals shall be stored, handled and used safely to avoid serious injuries or fatalities.

Chemicals used in the workplace need not be dangerous if used correctly & safely. With proper training and information, safety precautions can be taken.

Employers have an obligation to provide a safe place of work. Workers also have a responsibility under law to; take reasonable care for their own safety and the safety of others; wear Personal Protective Equipment (PPE) and report unsafe situations to Management.

3. Identification and selection

Hazardous chemicals are classified according to differing criteria and are covered by work health and safety legislation, which focuses on controlling the risks associated with each chemical.

3.1. Hazardous chemicals

Hazardous chemicals are classified as a substance or mixture (other than a research chemical, sample for analysis or waste product. For further information visit the Safe Work Australia website (www.worksafe.qld.gov.au). Dangerous Goods also come under the banner hazardous chemicals when being stored at a workplace under the prescribed quantities mentioned in the Work Health and Safety Regulation 2011.

3.2. Dangerous goods

Dangerous goods are classified based on *immediate physical or chemical effects*, such as fire, explosion, corrosion and poisoning, affecting property, the environment or people.

Dangerous goods are easily identified by a small diamond shape on the packaging which includes a number and a statement of what it is. Class labels for dangerous goods can be found in this procedure (see below). For further information visit the Safe Work Australia website.

3.3. Selection

Whenever possible, non-hazardous chemicals should be selected. Where this is not possible, the selection of hazardous chemicals will consider the following:

- Flammability and explosiveness;
- Toxicity (short and long term);
- Chemical action and instability;
- Corrosive properties;
- Carcinogenic classification (if relevant);
- Specific PPE requirements;
- Environmental hazards;
- Storage requirements; and
- Possible adverse health effects to users.

Where practicable, the substance that presents the lowest potential hazard (whilst also meeting the technical requirements for the job) will be selected.

3.4. Purchasing

Prior to purchasing substances that may be hazardous, the Project Manager will request and review safety information from the product supplier or manufacturer. The Project Manager will ensure that a risk assessment is conducted and that the risk assessment along with safety information is considered when selecting an appropriate product. Whenever practical, the Project Manager will select products that are not hazardous. Where a hazardous product is required, the product with lower risks should be selected.

Risk assessments carried out prior to purchasing a substance will be conducted in accordance with this procedure (see below).

3.5. Summary

If the product has warning phrase or a classification diamond this will generally indicate the substance is a hazardous chemical and that a SDS is required to be held.

Once a hazard has been identified, the risk of injury or harm needs to be determined and an assessment made as to whether it is practical to reduce or remove that hazard.

The Project Manager is responsible to ensure that risk assessments are completed for all hazardous chemicals that are proposed to be used on the site.

Risk assessments will be carried out and recorded in accordance with the requirements of this procedure.

4. Safety Data Sheets (SDS)

4.1. Obtaining an SDS

Suppliers of hazardous chemicals are compelled by law to supply an SDS on request.

It is the responsibility of the person purchasing a substance to:

- Check if the chemical is a hazardous chemical and if so;
- Verify that an SDS is not held and if not;
- Request an SDS from the supplier that is dated within the last 5 years; and,
- Hand the SDS to the Safety Advisor for a risk assessment.

The Project Manager is responsible for ensuring that SDS' are held for all substances used on projects. It is recommended to obtain an SDS and to conduct a risk assessment on the use of the substance before ordering that substance (see above).

4.2. Contents of an SDS

An SDS may vary in layout but they all include;

- Shall be in English,
- Manufacturer's Name, Australian address, Contact No. & Emergency Contact No.
- The full name of the product. UN Number and Hazchem Code. Poisons schedule No., packaging group, and common uses. This information is important for emergency service personnel
- It's physical characteristics and chemical properties e.g. colour, smell, flammability, explosive characteristics etc.
- Ingredients (where the chemical content is a mixture- the proportions of chemicals)
- Health Hazards or effects of exposure including routes of exposure – inhalation, skin contact etc.
- Safe use of the chemical / substance
- Precautions to be taken and PPE to be used for general use
- Emergency and First Aid Information
- Safe Handling – including storage, waste disposal, action to take in a "spill" situation, etc.

As Tallan Group usually only use these products in small quantities, we are mostly in need of the information about- Precautions, Protection, Flammability, First Aid and what to do in the event of an emergency.

4.3. Additional information on packaging

The packaging of the product may also include some of this important information, such as a caution or warning phase, and the "UN Number" or "Hazchem Number" and there may also be information about First Aid treatment etc.

The limitation with labels is that they are usually small and therefore cannot contain all the necessary information and they are easily damaged and are easily rendered illegible. Nether-the-less, warnings on packaging should be complied with.

4.4. Availability of SDS

SDS' are required by law to be readily available to all persons using a substance(s).

Tallan Group Personnel shall ensure that they have readily available, a current copy of the SDS associated with each hazardous chemical that they use.

4.5. SDS register

Workplaces are required by law to maintain a register of hazardous chemicals held at the workplace. The register will be documented on the Safety Data Sheets Register and will be kept up to date and on site. It will record:

- A copy of the current SDS
- A risk assessment of the intended use on site
- The relevant safe work method statement (for construction sites)
- The name of the supplier or subcontractor intending to use the substances, if applicable.
- The name of the substance
- Amount stored on site, and
- The Hazchem code

The Project Manager will nominate a person to maintain the register of safety data sheets for the site. The register may also contain the SDS of non-hazardous chemical.

4.6. SDS in an emergency

In the event of a contamination, spill or an emergency, reference should be immediately made to the SDS to determine how to deal with the problem.

If it is required to contact Emergency services (000) or Poisons information 13 11 26 (all States), it is important to state the UN Number, from the SDS, to aid the emergency personnel in determining the chemical(s) being dealt with.

Similarly, if the Fire Brigade knows the HAZCHEM Number (e.g. 3WE) they are able to determine how to handle the situation before they arrive on site.

If an ambulance attends after an accident involving chemicals, the SDS should be handed to the ambulance officers.

5. Review and approval of substances

5.1. Approval required before use

No substance will be used on site without approval of the Project Manager or the nominated person.

A substance will be deemed to be approved for use on site where:

- The person bringing the substance onto the site has notified the Project Manager;
- A copy of the SDS has been obtained for the site;
- A risk assessment has been completed and is available on site; and,
- The substance is included in the SDS register.

5.2. SDS to be current

An SDS is valid for a period of 5 years from the date of publication (not 5 years from the date of the Business receiving it). It is the responsibility of the holder of an SDS to check periodically, that the SDS held, is still current.

5.3. Review of SDS/risk assessment

Risk assessments of hazardous chemicals shall be reviewed:

- 5 yearly or,
- When the use of the substance changes or,
- When the substance contents changes (obtain new SDS) or,

- When health surveillance or monitoring identifies that control measures need to be reviewed or,
- Following an accident, injury or near miss involving the substance or,
- The work process involving the use of the substances significantly changes.

6. Management of hazardous chemicals

6.1. Legislative requirements

Under current Legislation, Tallan Group sites typically meet the criteria of a "Minor storage workplace".

A minor storage workplace is limited to a holding of less than 1000 litres/kilos of a hazardous chemical designated as Packing Group III (PGIII) for Classes 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, or 8. In addition, AS1940 restricts holding of flammable liquids to less than 500 litres (Class 3 PGIII) for minor storage facility.

Managers are responsible for maintaining levels of hazardous chemicals within these limits and for correct storage.

For further information visit the Safe Work Australia website.

6.2. Storage

Security

As far as practical, there shall be adequate security to prevent access to hazardous chemicals, or combustible liquids, stored at the workplace.

Preventing Interaction with other goods

Hazardous chemicals and combustible liquids shall be stored in a manner so that in the event of a loss of containment, they are not able to react with other incompatible goods, thereby creating a dangerous situation (Refer to the table below).

Keeping hazardous chemicals dry

Goods that can react or deteriorate from effects of water shall be kept dry.

Prevention of contamination of food or personal products

Hazardous chemicals, and combustible liquids shall be stored in a manner so that, in the event of a leak or spill, there is no risk of contamination with food or personal products

Elimination of Ignition sources

All ignition sources in a hazardous area shall be eliminated or controlled to an acceptable level, to prevent fire/explosion.

Spill containment

Storage systems should be designed to contain the contents of any spills. This is generally achieved by 'bunding' i.e. a containment wall or device. The capacity of a bund should have a capacity of 25% of the volume of the material stored or a capacity of the largest container (whichever the greater).

Spill kits shall be provided and be accessible, to enable containment of any spills or

leaks of any hazardous chemicals or combustible liquid.

Flammable liquids

All flammable liquids should, where practical, be kept in a 'depot'. Small quantities should be stored in a bunded area and separated in accordance with the section 10 of this procedure.

Signage should include the designated hazardous chemical symbol(s) and all warning phrases.

Smoking or naked flame is not permitted within 3 metres of a Flammable store.

Store minimum quantities only.

AS1940 "Storage & Handling of Flammable & Combustible liquids" refers to flammable liquid storage

Flammable gases

The characteristics of the gas shall be determined (by referencing the SDS) before designing suitable storage. For example: LP gas is heavier than air and storage requires venting at ground-level. Gas storage areas generally require good ventilation to prevent build-up of gas in the event of leaks.

Leaks shall be detected by use of a safe method (e.g. use of soapy water- not a flame!)

Gas bottles should be stored and used in an up-right position- except where otherwise directed (e.g. forklift LP gas bottles are used horizontally)

Bottles shall be restrained to prevent toppling (crush injury and gas can leak through pressure-escape valves).

Empty bottles and full bottles should be identified and segregated.

Storage area shall display all warning phrases and relative hazardous chemicals symbols.

Smoking or ignition sources are not permitted within 6 metres of Flammable gas storage (refer SDS).

Store minimum quantities only.

6.3. Identification of hazardous chemicals storage

Contents of hazardous chemicals contained in an enclosed system (pipe or pipe system) shall be identified according to AS1345 – Identification of the contents of pipes, conduits and ducts.

Storage should, as a minimum, display identification of the substance, by name; hazardous chemical symbol and all warning phrases.

Larger storage facilities require full placarding under current legislation. For further information visit the Safe Work Australia website.

6.4. Decanting of hazardous chemicals

If a hazardous chemical is decanted into another container, the new container shall display the full name of substance, supplier's name and contact number, all the warning phrases etc. - unless the substance is to be used immediately and the container is emptied and cleaned.

The decanting of substances into unmarked containers is a dangerous practice. In the event of ingestion or exposure, it would be difficult to determine the type of substance and how to treat the injury. Not only is this practice dangerous, it is illegal and penalties apply. In such an instance, negligence would be easily proven.

6.5. Disposal

The Project Manager is responsible for ensuring that hazardous chemicals are disposed of in accordance with the local council requirements and, when necessary, by a licensed and qualified carrier.

Similarly, contaminated land or other materials that have resulted from spills or spill clean-ups will also be handled and disposed of in accordance with this procedure.

In general, packaging that contained hazardous chemicals shall be thoroughly cleaned before disposal.

Requirements for waste management for the site are recorded in the Environmental Management Plan.

6.6. PPE/ exposure

PPE will be available for use when handling hazardous chemicals in accordance with the requirements set out in the SDS. Whenever identified, training will be provided for the correct use of PPE supplied for handling hazardous chemicals.

All PPE requirements are to be followed as recommended on specific product as per SDS sheet. This PPE shall be fit for purpose to the product and disposed of in the recommended way or cleaned as required.

Exposure to potentially harmful substances shall not exceed recommendation on SDS sheets or legislative requirement.

7. Emergency procedures

Site emergency procedures should take into consideration hazardous chemicals stored on site. This may include spill kits, emergency contact numbers and Hazchem signage at the entrance to the workplace. Site emergency procedures are documented in the site-specific template Emergency Response Plan.

8. Training of personnel in the safe use of hazardous chemicals

All personnel using hazardous chemicals shall be trained in the hazards associated with

their use. This training shall include:

- Safe work practices relating to the storage and handling of hazardous chemicals that are being used in the workplace;
- How to locate an SDS, and use the information;
- The nature of the hazards and risks associated with the duties being performed;
- Measures used to control risk;
- Proper use of PPE;
- Emergency procedures;
- First aid and incident reporting procedures to be followed in case of injury or illness;
- Warning phrases; and,
- Disposal of packaging and unused content.

Employees supervising other employees who use hazardous chemicals should also receive training.

When developing and providing training programs, consideration should be made for any special needs the personnel being trained may have, such as:

- Specific skills;
- Work experience;
- Physical or intellectual disability;
- First language;
- Literacy; and,
- Age.

8.1. Review of training

To ensure that training remains effective, a regular review the training provided should be undertaken to identify the need for further training. Further training should be provided when:

- New hazardous chemicals that are introduced to the premises;
- There are changes to the layout of the workplace, work practices or control measures for the hazardous chemical; and
- When new information on the hazards of the hazardous chemical is made available (for example, a revised SDS).

Information, instruction and training should be evaluated to ensure that the content is clearly understood by all personnel. Evaluation could be completed using the form Task Observation Form in accordance with the Task Observations Procedure.

Refresher training should be provided as required and induction training for all new personnel (and other people engaged to carry out work at the premises) should take place.

8.2. Limitations of training

Although training plays an important part in ensuring effective risk control, it is not a risk control measure in itself. People who are likely to be affected by a hazardous chemical on site should be aware of the nature of the risk and the role that specific control measures play in risk prevention. However, safe worker behaviour should not be relied on alone. High levels of training and instruction cannot substitute for effective and

proper measures to control the risk.

9. Risk assessments

The Project Manager is responsible for ensuring that hazardous chemicals risk assessments are completed. Typically, the Safety Advisor will facilitate and oversee the assessment of risk for hazardous chemicals.

On receipt of the SDS, a risk assessment will be conducted to determine if there are any possible dangers in using the chemical for the required purpose. This risk assessment shall be documented on the Hazardous Chemicals Risk Assessment Form.

Risk assessment will be carried out in accordance with the Risk Management procedure. Consideration will be given to the “Hierarchy of Controls” – referred to in the procedure. And whenever practical a less hazardous chemical will be chosen.

Once the substance has been selected, the Project Manager will ensure that satisfactory control measures are implemented to eliminate any dangers identified. A control measure, for instance, may be the wearing of gloves, overalls and a face shield while handing a chemical. Typically, control measures are prescribed in the SDS.

Completed risk assessments will be filed with the SDS and form part of the register of safety data sheets. The register will be documented on the Safety Data Sheets Register.

10. Safe Work Method Statements (SWMS)

The Project Manager is responsible for ensuring that SWMS are documented and approved for all hazardous chemicals to be used on the project. SWMS will be documented on the template or an existing SWMS template will be used and will document the proposed use of the hazardous chemical on the project. The SWMS will be filed with the SDS and forms part of the SDS Register.

Whenever carrying out a task that involves the use of a hazardous chemical on the project, a copy of the relevant SWMS approved for the project will be attached to the Job Safety and Environmental Analysis (JSEA) for that task. The process for use of JSAs and SWMSs for projects is detailed in the Risk Management procedure and in the site specific safety management plan based on the Health and Safety Management Plan.

11. Chemicals requiring health surveillance and prohibited Carcinogens

11.1. Restricted hazardous chemicals requiring health surveillance

Health monitoring, when required, will be carried out in accordance with the Occupational Health procedure. When a project commences the need for health surveillance is assessed using the Health Monitoring form.

Certain restricted hazardous chemicals require that a worker undergoes regular monitoring of health indicators. These substances are:

- Acrylonitrile;
- Arsenic (inorganic);
- Benzene;
- Cadmium;
- Chromium (inorganic);

- Creosote;
- Crystalline silica;
- Isocyanates (often found in 2-pack glues and paints);
- Mercury (inorganic);
- 4,4' methylene bis (2-chloroaniline) (MOCA);
- Organophosphate pesticides
- Pentachlorophenol (PCPs);
- Polycyclic aromatic hydrocarbons
- Thallium
- Vinyl chloride.

Lead processes also require monitoring and have other constraints.

Should the risk assessment of hazardous chemicals reveal any of these materials, alternative should be found or otherwise, specialist advice should be sought.

11.2. Prohibited carcinogens

The prohibition of the use of carcinogens listed below applies to the pure substance and where the substance is present in a mixture at a concentration greater than 0.1%

- 2-Acetylaminofluorene [53-96-3];
- Aflatoxins;
- 4-Aminodiphenyl [92-67-1];
- Benzidine [92-87-5] and its salts (including benzidine dihydrochloride [531-85-1]);
- Bis (Chloromethyl) ether [107-30-2] (technical grade which contains bis (chloromethyl) ether);
- 4-Dimethylaminoazobenzene [60-11-7] (Dimethyl Yellow);
- 2-Naphthylamine [91-59-8] and its salts; and,
- 4-Nitrodiphenyl [92-93-3].

Whilst it is unlikely that any of these prohibited carcinogens will be found in this Industry, personnel should be aware of their prohibition.



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