



Working safely with hazardous substances

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1.0

Introduction

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- 1.3** How hazardous substances are classified
- 1.4** Controls for managing hazardous substances
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- 1.6** So far as is reasonably practicable
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Around 150,000 workplaces throughout New Zealand use hazardous substances. The risks they cause are often taken for granted. For example, common hazardous substances like commercial cleaning products, paints, adhesives, acids, bases and solvents can cause serious harm if not used safely.

Not understanding the harm that can occur when working with hazardous substances is a serious problem with serious consequences. Between 600 and 900 New Zealanders are estimated to die from work-related illness every year, many from exposure to hazardous substances.

1.1 About this guide

This guide helps you manage the hazardous substances you use, handle, manufacture and store at work more safely. It also helps you to meet your obligations under the Health and Safety at Work Act (HSWA) and the Health and Safety at Work (Hazardous Substances) Regulations (the Regulations). It is a reference document about what you need to do and how to do it.

Use this guide alongside WorkSafe's other guidance and the Hazardous Substances Calculator available at: www.hazardoussubstances.govt.nz



When you enter the details of your inventory into the Calculator, it works out the key controls you need to safely manage your hazardous substances. When you see this calculator icon in this guide, it means that the control is included in the Calculator. See page 15 of this guide for more information about using the Calculator.

While this guide gives you information about the key controls for hazardous substances, the only way to know which controls you have to follow is to know what hazardous substances you have and in what quantities by creating an inventory.

You can use the Calculator to create an inventory, or WorkSafe has also published a quick guide on how to prepare an inventory of your hazardous substances, which includes a template of a hazardous substance inventory. Another tool, the *Workbook*, takes you through the process of creating an inventory, and is available at: www.hazardoussubstances.govt.nz

Once you have created an inventory, the Calculator will tell you the key controls that apply, or you can use the Environmental Protection Authority (EPA) database, *Approved Hazardous Substances with Controls*, to see a full list of the controls for your substances.

This guide is for PCBU (persons conducting a business or undertaking), especially small business PCBU. When you read 'you' or 'business', it generally means the PCBU. See Section 1.8 of this guide for more information on the PCBU and their duties.

This guide focuses on the health and safety principles and key controls that increase workplace health and safety. It helps you improve your compliance with these controls but does not contain information about every control, or detailed information about transporting or disposing of substances, or about explosives.

This section describes some of the key concepts you will see in the guide. There is a glossary at the back explaining some of the terms that are used.

1.2 Hazardous substances

Hazardous substances are substances that are explosive, flammable, oxidising, toxic, corrosive or toxic to the environment (ecotoxic).

A hazardous substance may be a single chemical or a mixture of both hazardous and non-hazardous chemicals. Most products used in the workplace are a mixture of chemicals.

In this guide the words product and substance may be used interchangeably.

1.3 How hazardous substances are classified

Hazardous substances are classified based on the hazards they pose to people and the environment due to their hazardous properties. This helps determine how to manage the risks they cause. Each new hazardous substance imported into New Zealand or manufactured in New Zealand must be approved by the EPA and classified.

Most hazardous substances have more than one hazardous property and as a result, more than one classification. Based on this classification, *controls* are placed on a substance to manage the risks it can cause.

For more information on classifications, see pages 8-9 of this guide.

1.4 Controls for managing hazardous substances

You need to follow the rules that apply for a substance's classification or classifications to manage the risks it poses. These rules are known as controls.

The controls vary depending on the risk of the hazardous substance, its hazardous properties, how much of it there is and how it is used.

Some controls, such as preparing an inventory or labelling always apply no matter what hazardous substances you use and store. Other controls, such as signage or certified handlers, apply only if you have specific hazardous substances over certain limits (thresholds). In other words, the controls you need to follow depend on the type and amount of hazardous substances you have.

For more information on controls, see pages 10-13 of this guide.

1.5 Managing risk

Consider whether you need hazardous substances in your workplace. If you can, eliminate hazardous substances from your workplace. Then, consider whether you can substitute any that remain for less hazardous ones.

But sometimes a hazardous substance is necessary for your work and cannot be eliminated or substituted. If a hazardous substance has to be in a workplace, the Regulations set specific controls to reduce the risk of working with it.

After you put in place these specific controls, you then need to identify any remaining hazards that could create reasonably foreseeable risks, and 'so far as is reasonably practicable' eliminate them to protect workers and other people in the workplace. See below for more about what 'so far as is reasonably practicable' means.

If it is not reasonably practicable to eliminate the remaining risks or substitute the hazards that causes them, the PCBU must minimise them, so far as is reasonably practicable, by putting in place the most effective control measures for them.

These are listed below, from most to least effective:

- Isolating the hazards to prevent people from being exposed to the risks or applying engineering control measures – physical control measures that might include mechanical devices or processes.
- Applying administrative controls, if any risk remains after isolating the hazard or applying engineering control measures. These are safe methods of work, processes or procedures designed to minimise risk. They do not include engineering controls, or wearing or using personal protective equipment (PPE).
- If a risk still remains after all of the above, you must minimise it by ensuring the provision and use of suitable PPE when other control measures alone can't adequately manage the risk.

The risk management process is explained in more detail between pages 16 and 19 of this guide.

1.6 ‘So far as is reasonably practicable’

When managing risk, you need to eliminate or minimise risks ‘so far as is reasonably practicable’. This means something can reasonably be done after weighing up and considering:

- how likely it is that a hazard or risk will cause harm
- how severe that harm could be
- what a person knows, or reasonably should know, about the risk and how to eliminate or minimise it
- the measures in place to eliminate or minimise the risk (control measures)
- how available and suitable the control measures are.

1.7 Health and safety duties in the workplace

Everyone at a workplace has a role to play in workplace health and safety. The duty holders under HSWA are:

- The PCBU – see below for more about the PCBU.
- The officers of the PCBU, who must ensure that the PCBU meets its health and safety duties. An officer could be a company director or anyone whose position allows them to exercise significant influence over the management of the business or undertaking.
- Workers have a duty to take reasonable care to keep themselves and others healthy and safe when doing their work. Workers include employees, contractors, subcontractors, apprentices and volunteer workers.
- Other people in the workplace, such as visitors or customers, have a duty to take reasonable care for their own health and safety, and not to harm others.

For more information on each duty holder and their duties, visit WorkSafe’s website.

1.8 More about the PCBU


HSWA gives duties to the person conducting a business or undertaking. A PCBU may be an individual person or an organisation, but is usually an organisation. A PCBU could be a business that is a limited liability company, a sole trader, self-employed person or a limited partnership, among others.

A PCBU isn’t a volunteer association or a home occupier who employs someone to do work around the home, or an officer in a business or undertaking.

A PCBU has a primary duty of care to ensure that, so far as is reasonably practicable, the health and safety of workers, and that other persons, such as visitors or customers, are not put at risk by its work.

PCBUs also have other duties including providing information, training, instruction or supervision and ensuring worker engagement and participation.

For more information about the PCBU and its duties, see WorkSafe’s website.



2.0

Approvals, hazard classifications and controls

IN THIS SECTION:

- 2.1 Approvals
- 2.2 Hazard classifications
- 2.3 Controls for managing
hazardous substances

2.1 Approvals

Every hazardous substance imported into New Zealand or manufactured in New Zealand must be approved under the HSNO Act and have an approval number.

Most products that small businesses use are approved under group standards. These are approvals for similar substances or products with a similar use (eg **HSR002530** Cleaning Products). If a product's hazard classifications and uses are covered by a group standard, an importer or manufacturer can assign it to that group standard and use its approval number.

You can usually find approval numbers on the safety data sheet (SDS) in *Section 15: Regulatory Information*. If you can't find the approval number on your SDS, contact your supplier. For more information about the SDS, see page 28 of this guide.

You can also find the approval numbers on the EPA *Approved Hazardous Substances with Controls* database, available at their website: www.epa.govt.nz

When you enter the name of most hazardous substances into the *Hazardous Substances Calculator* (the Calculator), it will also provide the approval number.

The Calculator lists the key controls from the Health and Safety at Work (Hazardous Substances) Regulations 2017 (the Regulations) and the HSNO Act that apply to substances.

For more information about how to use this information in the Calculator see page 15 of this guide.

2.2 Hazard classifications

Hazardous substances can be classified under several similar systems. New Zealand uses the HSNO system, based on the United Nations (UN) system for classifying dangerous goods for transport and the Globally Harmonised System of Classification and Labelling of Chemicals (GHS). Substances manufactured overseas may use another system.

See page 9 of this guide for more information on HSNO hazard classifications.

Your product's classification should be listed in the *Hazards Identification* section of the SDS, usually Section 2. See page 28 of this guide for more information on the SDS.

Classification systems

HSNO CLASSIFICATION

HSNO classifications are currently used in New Zealand to classify hazardous substances. Hazardous substances are assigned a classification largely based on the UN dangerous goods classification system. However, for labelling, SDS and packaging, the GHS system may be used (see below).

GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

The GHS is an internationally agreed system that aims to replace the classification and labelling standards used in different countries with globally consistent criteria. Like the HSNO classification system, it assigns substances or articles to 9 physical hazard classes largely based on the United Nations Dangerous Goods system. It also classifies health and environmental hazards into type. Products brought into New Zealand from overseas may use the GHS system rather than HSNO on labels, the SDS or packaging. A conversion table for HSNO and GHS classifications is available at: www.epa.govt.nz

UN NUMBER

The UN number is a four digit number assigned to hazardous materials and articles for international transport. Numbers are assigned to individual hazardous substances or groups of chemicals or products with similar properties.

UN CLASS

UN classes classify dangerous goods into classes for transport according to their hazard. Some classes are subdivided into divisions. The class numbers are generally similar to those used in the HSNO classifications (see below), except for class 9, which is miscellaneous under the UN system and for substances toxic to the environment under HSNO.

UN PACKING GROUP

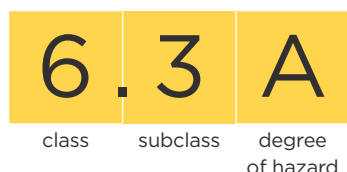
Packing groups determine what protective packaging is required for dangerous goods during transportation. There are three groups (I, II and III) representing high, medium or low danger.

You can use the UN class and packing group in the calculator if the HSNO classification is unavailable.

HSNO classification system

The HSNO classes are:

- Class 1 – explosives (note that this guide does not provide information about explosives)
- Class 2 – flammable gases
- Class 3 – flammable liquids
- Class 4 – flammable solids
- Class 5 – oxidising substances
- Class 6 – substances toxic to people
- Class 8 – corrosive substances
- Class 9 – substances toxic to the environment.



For example, for a substance classified as 6.3A:

- 6 is the class, which indicates the substance is toxic to people
- 3 is the subclass, which indicates the type of toxicity, for example, irritating to the skin, and
- the letter A indicates the degree of hazard, with A being the highest hazard.

Therefore a hazardous substance classified as 6.3A is highly irritating to the skin.

**FIGURE 1:
HSNO Classification
System**

The HSNO system uses numbered classes and subclasses to indicate the hazardous properties of a substance

MOST HAZARDOUS SUBSTANCES HAVE MORE THAN ONE CLASSIFICATION

Because most hazardous substances have more than one hazardous property, they also have more than one classification. For example, petrol is classified as 3.1A (highly flammable liquid), 6.1E (acutely toxic – may be harmful, aspiration hazard), 6.3B (mildly irritating to the skin), 6.7B (suspected human carcinogen) and 9.1B (toxic to the aquatic environment).

2.3 Controls for managing hazardous substances

Whenever a hazardous substance is present in your workplace, you need to put in place the controls for that substance. Your substance's controls come from the Regulations and the HSNO Act.

The simplest way to find out the key controls that apply to your substance is to enter its name or approval number into the Calculator.

Some controls are required for every substance. In the Calculator, most of these controls are grouped together as 'Generic Controls'. Other controls apply only if you have substances in your workplace over specified threshold quantities.

Controls for hazardous substances in any quantity

AN INVENTORY AND SAFETY DATA SHEETS FOR ALL HAZARDOUS SUBSTANCES YOU USE, HANDLE, MANUFACTURE AND STORE

You must prepare and maintain an inventory of all the hazardous substances used and stored at your workplace, including hazardous waste. See WorkSafe's inventory quick guide for information on how to prepare an inventory of your hazardous substances. See also page 15 of this guide for information about what to include in an inventory.

You need an SDS for each substance in your workplace. See page 28 of this guide for a list of the sections of an SDS.

RISK ASSESSMENT FOLLOWED BY ELIMINATION OR MINIMISATION

If you cannot eliminate a hazardous substance from your workplace or substitute it with a safer one, and any risk remains after you have applied the controls for the substance from the regulations and the substance approval, minimise the risk using control measures described on page 5 of this guide in the introduction and in more detail between pages 16 and 19.

INFORMATION, INSTRUCTION, TRAINING AND SUPERVISION

Workers need training and instruction to make sure they have the knowledge and experience to use, handle, manufacture and store hazardous substances safely, or they need to be supervised by someone who has this knowledge. See page 20-21 of this guide for more information.

EMERGENCY PREPARATION

Make sure your workers and workplace are prepared for an emergency and that you have an emergency response plan. See page 40 of this guide for more information.

LABELLING CONTAINERS OF HAZARDOUS SUBSTANCES (INCLUDING HAZARDOUS WASTE)

You need to label all containers of hazardous substances at the workplace, including containers of hazardous waste. See pages 24-27 of this guide for more information.

PPE

You have a duty to ensure the provision of any and all PPE the worker requires to carry out their work. See pages 18-19 of this guide for more information.

Substance specific controls

If you use, handle, manufacture or store some hazardous substances over specific threshold quantities, you may need to put in place additional controls.

The Calculator will help you work out what key controls apply.



FIRE EXTINGUISHERS

If you have flammable or oxidising substances, you may need a specific type and number of fire extinguishers. However, even if it's not a requirement for your substances, you should always have fire extinguishers available. See page 41 of this guide for more information.

SIGNS

Depending on the types and amounts of hazardous substances you use or store, you may need signs to warn people that hazardous substances are present. However, it's always best practice to have signs in place. See pages 29-31 of this guide for more information.

CERTIFIED HANDLERS

A certified handler is someone who has specific knowledge and experience about how to handle specified highly toxic, corrosive and explosive substances and who holds a compliance certificate from a compliance certifier. See pages 45-46 of this guide for more information.

A LOCATION COMPLIANCE CERTIFICATE

If you have flammable, oxidising, toxic or corrosive substances at your workplace, you may need a location compliance certificate to certify that you are managing the risks associated with those substances. See pages 47-48 for more information.

HAZARDOUS AREAS

This is an area around flammable substances where sources of ignition are excluded to prevent ignition of a flammable vapour resulting in fire/explosion. See pages 36-37 of this guide for more information.

EMERGENCY RESPONSE PLAN

An emergency response plan is a written document that lists what will be done in an emergency involving your hazardous substances and who is responsible for each task. See page 42 of this guide for more information.

SECONDARY CONTAINMENT (BUNDING)

A secondary containment system contains liquid substances if they leak or spill from the container or vessel they are stored in and enables them to be recovered. See page 42 of this guide for more information.

A STATIONARY CONTAINER SYSTEM COMPLIANCE CERTIFICATE

If you have a stationary tank containing a gas or liquid hazardous substance, you may need a stationary container system compliance certificate to certify that your tank is safe and complies with the rules.

The Calculator will tell you whether a stationary container system compliance certificate is required. See page 49 of this guide for more information.

TRACKING


Tracking is a record of the lifecycle of a substance. The Calculator will tell you whether tracking is required for your substance. See pages 51-52 of this guide for more information.

AN APPROVED FILLER CERTIFICATE

An approved filler certificate certifies that a person has the necessary training, knowledge and skills to fill compressed gas containers safely, and that this knowledge has been certified by a compliance certifier. See pages 46-47 of this guide for more information.

CONTROLLED SUBSTANCE LICENCE

You need a controlled substance licence (CSL) to possess certain class 1 (explosive) and class 6 (vertebrate toxic agents or fumigants) substances. See WorkSafe's website for more information on obtaining a controlled substance licence and what substances require a controlled substance licence (CSL).



3.0

Manage hazardous substances risks

IN THIS SECTION:

- 3.1 Hazardous substances can damage your health
- 3.2 Applying substance controls
- 3.3 Prepare an inventory of your hazardous substances
- 3.4 Find and implement the key controls with the Calculator
- 3.5 Manage remaining hazardous substances risks
- 3.6 Review control measures
- 3.7 Health and exposure monitoring
- 3.8 Information, instruction and training
- 3.9 Young people

3.1 Hazardous substances can damage your health

Some risks related with hazardous substances are obvious. For example, highly flammable substances like petrol, acetone or methylated spirits must be kept away from an open flame to prevent a fire or an explosion.

Serious accidents like explosions do happen, but don't forget the less obvious harm hazardous substances can cause, especially due to the following types of exposure:

- **Breathing in toxic vapours, dusts, mists, gases or fumes from hazardous substances.**

If you can smell it, you are breathing it in. But don't depend on smell alone, as your sense of smell can become overloaded and even though you may no longer be able to smell the substance, it might still be in the air.

Some toxic hazardous substances don't have a smell, so you shouldn't use smell as the only indicator that hazardous substances are present.

- **Hazardous substances being absorbed through your skin and entering your blood stream.**

If you touch something exposed to hazardous substances (eg tools, PPE, surfaces) without wearing proper protection, you could absorb the substances through your skin.

- **Swallowing or ingesting hazardous substances.**

Hazardous substances can be accidentally swallowed, for example, if you eat or smoke without washing your hands after using hazardous substances.

Solvent vapours are an example of how hazardous substances can harm you when you breathe them in, with immediate effects like headaches, forgetfulness, drowsiness, dizziness and/or nausea, irritability and mood changes, and irritation of the eyes, lungs and skin.

Long-term effects may not be immediately obvious but can be more serious, such as personality changes, sleep disorders, memory loss, cancer, damage to the liver and kidneys, harm to unborn children, fertility problems, and even death.

To avoid these consequences, you must manage risk to keep yourself, your workers and your workplace safe.

3.2 Applying substance controls

To protect you from risk, you must put in place specific technical controls whenever hazardous substances are present in your workplace above specified thresholds. The following steps show you how to use the Calculator to find the key controls for your substances.

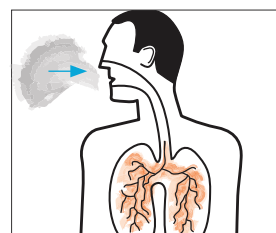
1. Make a list of all of your substances

First, make a list of all of the substances used, stored, handled or manufactured (ie mixed or blended) at your workplace including any waste created from manufacturing or industrial processes. Include all substances to begin with; even the ones you might not think are hazardous.

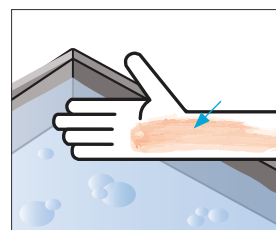
2. Obtain a safety data sheet for each substance

A safety data sheet (SDS) provides information on the hazards posed by a hazardous substance and safe ways to use, store, transport and dispose of it. You need to obtain an SDS for each hazardous substance from its manufacturer,

Inhalation



Skin absorption



Ingestion



FIGURE 2:
How hazardous substances enter the body

importer or supplier when it is first supplied to you, when it is supplied to you for the first time in five years, or when it is supplied for the first time after any changes are made to its SDS. See pages 28-29 for more information, including when you don't need an SDS.

3. Determine whether your substances are hazardous

Next, determine whether your substances are hazardous. Read the label for warnings (eg causes skin irritation) and the SDS, especially the Hazards Identification section, to find out whether the substance is hazardous.

Only hazardous substances can be entered into the Calculator and only hazardous substances have a hazard classification.

Some substances may be hazardous to health without being classified as hazardous substances (eg wood dust). Although you need to manage the risks associated with these substances, they do not need to be entered into your inventory.

See the definition of hazardous substances in the Glossary.

3.3 Prepare an inventory of your hazardous substances

You must prepare an inventory of the hazardous substances that you use, handle, manufacture or store in your workplace, and ensure that the information in it is up-to-date.

The inventory must include:

- the product or chemical name and UN number of each hazardous substance
- the maximum amount of each hazardous substance likely to be at the workplace
- the location of the hazardous substances
- specific storage and segregation requirements and
- the current SDS for each hazardous substance or a condensed version of the key information from the SDS.

The inventory also needs to include waste likely to meet the criteria to be classified as a hazardous substance.

The inventory should also include other information useful for identifying the substance (eg classification, UN class and packing group, approval number) and about its storage (eg container size and type, whether the container is open or closed, or whether the substance is a solid, liquid or gas).

3.4 Find and implement the key controls with the Calculator

Enter the hazardous substances in your inventory into the Calculator. Generally the name of the hazardous substance is enough, but you can also enter the HSNO approval number or CAS number.

If you cannot find your substance in the Calculator with this information, you can search for it using the name or HSNO approval number of the group standard it is approved under, followed by its hazard classifications.

If you do not have these, use the UN class and UN packing group found in Section 14 of the SDS. You may also need to enter information about the type of storage.

Then, after you enter information about maximum quantities, the Calculator will then list the key controls that apply to your substances.

Implement the controls for your substances provided by the Calculator and any additional controls from the HSNO approval. Check the SDS for any other controls that may apply to a specific substance.

3.5 Manage remaining hazardous substance risks

You need to manage risk remaining after you put in place the controls for the substances in your inventory. Assess your workplace to identify risks and think about possible exposure to the substances.

If it is reasonably practicable to do so, eliminate or substitute hazards, if not, minimise the risk. Choose control measures that protect multiple workers at once.

Engage workers in identifying hazards, assessing health and safety risks and proposing changes that affect their health and safety, including decisions about:

- how to eliminate health and safety risks and resolve health and safety issues
- how to minimise health and safety risks
- procedures for monitoring worker health and workplace conditions
- procedures to provide information to, train and instruct workers.

Worker engagement can take place through health and safety representatives (HSRs), health and safety committees (HSCs) and unions.

Identify the risks

When identifying the risks in your workplace, think about:

- the amount of the hazardous substance you have in the workplace
- any related physical or chemical hazards possible reactions with other substances
- ignition sources
- structures or plant or systems of work involved in using, handling, manufacturing or storing substances
- work carried out by workers with the substance and their risk of exposure to it and the likely degree of that exposure, and
- any prescribed exposure standards or restricted entry intervals for the substance.

Think about the people who work directly with hazardous substances in your workplace and the people who could come into contact with hazardous substances in the area where they are used. Observe your workers as they work, and discuss their work practices with them.

Don't forget people (eg cleaners) who may have contact with substances on contaminated surfaces and other people like contractors, visitors and workers who do not directly use hazardous substances but who may still be exposed to them.

Consider whether the people you have identified above could be exposed to a substance by breathing it in, ingesting it or absorbing it through their skin.

If exposure is likely, determine how serious it is

To determine the degree of exposure you need to know the concentration of the substance during exposure and how long and how often people are exposed to it by looking carefully at work processes.

You probably won't be able to accurately assess the degree of exposure yourself, as assessment usually involves measuring air concentrations of hazardous substances or measuring hazardous substances in urine or blood. Air measurements usually require workers to wear personal monitoring equipment as they do their job. This monitoring should be done by trained and competent professionals.

To find competent people to monitor exposure levels, see the website of the New Zealand Occupational Hygiene Society at: www.nzohs.org.nz

You can also see the list of member associations of the Health and Safety Association of New Zealand, under 'Who we are' at: www.hasanz.org.nz

Eliminate the substance or, if you can't, substitute it for a less hazardous one

If possible, getting rid of the hazard altogether from your workplace is the best solution. To decide which substances do not need to be in your workplace, ask yourself:

- Are there hazardous substances I no longer use?
- Am I storing more hazardous substances than I need?
- Are there hazardous substances that I can't identify or that are unlabelled?

If you answer yes to any of the above, have the hazardous substance you no longer need disposed of safely. Reducing the amount of hazardous substances may reduce your compliance needs and costs.

Check the SDS for disposal information. Check if your local council has any rules about disposing of hazardous substances safely or choose a specialist chemical waste disposal company.

If you use, handle, manufacture or store a very hazardous substance, ask your supplier if you can substitute it with a safer alternative.

For example, solvent based inks can sometimes be replaced by vegetable oil based inks. You still need to consider the risks associated with the safer alternative product.

Minimise the risk: isolation and engineering controls

Isolating the substance or its use may be the most effective way to manage the risk posed by your substance.

One example of isolating the hazard is spray painting in a booth that is fully automated and doesn't require anyone to enter. Another example is using an automated process for removing objects from degreasing baths.

You can minimise people's exposure to hazardous substances by using **engineering controls**, such as ventilation.

The most effective engineering controls contain the hazardous substance or prevent it from reaching workers.

Ventilation reduces worker exposure and the potential for a fire or explosion by diluting flammable vapours in the air around where hazardous substances are used, handled, manufactured or stored.

Local exhaust ventilation captures contaminants at, or very near, the source and vents them outside.

These systems should be installed and frequently maintained by a specialist, like a ventilation engineer or health and safety specialist because if they are not properly maintained or not up to the job, they may provide little or no protection for workers.

Minimise the risk: administrative controls

If you cannot eliminate or substitute a substance, and if risk still remains after isolating the hazard and implementing engineering controls, minimise exposure by implementing administrative controls. These are processes to make your workplace safer.

Some examples are:

- job rotation, reducing how long a worker is exposed to a hazardous substance
- restricting access to areas where hazardous substances are used
- not allowing smoking or eating where hazardous substances are used.



FIGURE 3:
Substituting hazardous substances for less hazardous ones

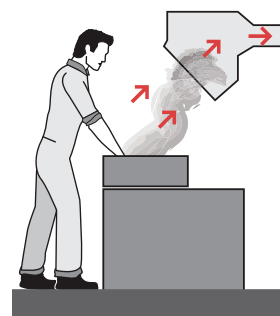


FIGURE 4:
Local exhaust ventilation
This illustration of local exhaust ventilation was taken from Safe Work Australia's Code of practice: *Managing risks*

Personal protective equipment (PPE)

For some substances, PPE is always required and you must make sure it is provided at all times. PPE is also part of the process to manage any risk remaining after you put in place the specific controls for your substances.

If you cannot eliminate or substitute a substance and risk remains after you put in place isolation, engineering and administrative controls, minimise the remaining risk by providing or ensuring the use of appropriate PPE. Consider:

- the hazardous substance workers are dealing with
- the level of hazardous substances in the air at your workplace
- the hazard information on the label or SDS.

Workers have a right to receive the PPE they need to do their job safely free of cost. They can also use their own, if they freely choose to do so, and their PPE is right for the job.

Whether you provide the worker with PPE or the worker provides their own, you need to ensure that it is suitable for the work and that it fits properly.

You need to provide workers with training and instruction about how to use, maintain, clean and store PPE.

Workers must:

- wear the PPE in line with the information, instruction and training they have received from the PCBU
- not intentionally damage or misuse it
- inform the PCBU if PPE is damaged or defective, or if it needs cleaning or decontamination.

You need to ensure that other persons at the workplace use or wear PPE in line with the information, training or instruction you provide.

When choosing PPE ask a health and safety specialist or your supplier for help and explain to them what job the PPE will be used for. Choose products that meet New Zealand and/or Australian Standards.

EXAMPLES OF PPE

Eyes

To protect your eyes from hazardous substances splashing into them use safety glasses, goggles, face-shields or visors.

Breathing

Dusts, vapours, mists, fumes and gases can be inhaled when using hazardous substances. Half or full-face respirators, air-fed helmets or breathing apparatus can protect workers from inhaling hazardous substances.

Body

Suitable overalls can help to protect the body from hazardous substances.

Hands and arms

Gloves made out of a suitable material should be worn when handling hazardous substances.

Feet and legs

Suitable footwear should be worn to protect feet. This could include safety boots or closed-toe shoes.

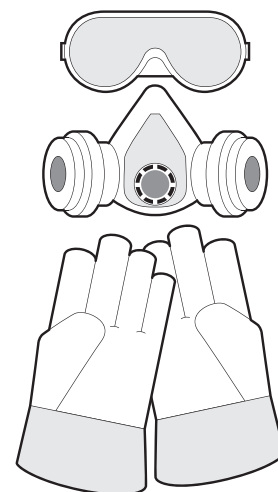


FIGURE 5:
Examples of PPE

PPE only works if it's used correctly. If the wrong sort is used, or it doesn't fit, it won't do its job. You must ensure it is kept clean and in working order and maintained, or repaired and replaced so it continues to minimise risks to health and safety.

Check your workers are using PPE properly and that it fits properly. Talk to them about the PPE, watch how they use it and what they do with it after they finish their work.

3.6 Review control measures

Review your control measures to make sure they are still effective:

- if a control measure is not controlling the risk it was meant to control (eg when an incident occurs)
- before a change at the workplace that is likely to create a new or different risk that the control measures may not control (eg a new substance is used)
- if a new hazard or risk is identified
- if you receive:
 - results from exposure monitoring that show a worker was exposed to a substance hazardous to health at a potentially harmful concentration and has an elevated level of that substance or its metabolites in his/her body
 - results from health monitoring show that a worker may have contracted a disease or illness or suffered an injury due to working with a health hazard that has monitoring requirements
 - a recommendation in an exposure or health monitoring report for you to take remedial measures
- if exposure monitoring shows that the concentration of a substance exceeds a prescribed exposure standard or accepted guidelines, such as the Workplace Exposure Standards and Biological Exposure Indices, available on our website
- if engaging with your workers indicates that control measures need to be reviewed
- if a health and safety representative asks for control measures to be reviewed.

3.7 Health and exposure monitoring

You have a duty of care to ensure, so far as reasonably practicable, the health and safety of workers while they work at the workplace. This includes making sure worker health and workplace conditions are monitored, so far as is reasonably practicable.

Health monitoring means monitoring a person to identify any changes in his or her health because of exposure to health hazards arising from their work. You must monitor workers' health if:

- their exposure to a substance hazardous to health warrants it
- it is possible that workers are being exposed to hazardous substances, to check that your minimisation techniques, control measures and PPE are protecting their health
- it is required in a safe work instrument.

An example of health monitoring is spirometry testing to detect early changes in lung function.

Exposure monitoring means measuring and evaluating a person's exposure to a health hazard. It includes monitoring workplace conditions and biological monitoring of people at the workplace. It can show if workers are potentially being exposed to a hazard at harmful levels and if control measures are working effectively.

Exposure monitoring is only a requirement if it is specified in:

- a prescribed exposure standard
- regulations under HSWA
- a substance or group standard approval under the HSNO Act
- a safe work instrument.

It is also required if you are uncertain whether a worker's exposure to a hazardous substance exceeds a prescribed exposure standard.

Examples of exposure monitoring are workers wearing personal monitoring equipment as they work or biological exposure monitoring – testing a worker's blood or urine for the presence of a harmful substance or its by-products (metabolites).

Even if not required, exposure monitoring can work together with health monitoring to give a better idea of whether your control measures are working correctly.

3.8 Information, instruction and training

Make sure everyone at the workplace has the information, training, instruction or supervision they need to protect themselves from the risks of hazardous substances.

Whenever anyone does work, uses plant or deals with a substance that causes a risk in a workplace, make sure they have knowledge and experience of similar places, work, plant or substances so they don't harm their own or other people's health and safety. If they don't have this knowledge or experience, make sure they are supervised by someone who does.

Workers also need to know where to find information about how to safely handle and store hazardous substances in the workplace, and the hazards these substances can cause. This includes safety data sheets, but is not limited to them.

Workers must also be adequately trained. Training needs to cover all plant, objects, substances or equipment the worker may use or handle, including PPE (how to wear, use, clean and store it safely) and control measures in place to reduce risks caused by those hazardous substances. The training and instruction needs to reflect:

- the nature of the work
- what is known about the risks involved with the work at the time the supervision and training is provided
- control measures in place to reduce the risks caused by those hazardous substances (eg ventilation).

Make sure training and instruction covers:

- the hazards of the hazardous substances that the worker will work with (eg are they flammable, corrosive, toxic)
- the control measures in place to reduce the risks caused by those hazardous substances (eg ventilation)
- how to safely use, handle, manufacture, store and dispose of the substances
- any specific duties the worker has under the regulations (eg making sure tanks are not filled beyond their maximum filling level)
- what the worker needs to do in an emergency involving the hazardous substances.

Make sure that your worker gets the practical experience they need in your workplace under direct supervision and that you keep a record of the training and instruction you provide to the worker. Even if a worker has previous training from another workplace you need to provide an induction to your workplace and supervised experience in your workplace.

Engage workers in decision-making about procedures for supervision, training, information and instruction. Make sure training, information and instruction are readily understandable – spend extra time with workers with reading difficulties or whose first language is not English.

3.9 Young people

Young people under 15 years old must not be present where you use, manufacture or generate hazardous substances. However, young people can be present:

- in areas where the public usually has access
- when the young person is under direct and active adult supervision suitable for the person's age and the risks
- when the young person is on a guided tour of the area, or
- in any areas used only for selling goods or services.

This means that young people can do school science experiments under adult supervision, or they can be present in the retail area of a factory as long as they stay only in the area where goods or services are sold.

CHECKLIST


What your workers need to know

- | | |
|-----------------------|---|
| <input type="radio"/> | Does the worker know the harm that can be caused from each hazardous substance they use at work? |
| <input type="radio"/> | Does the worker know how to safely store, use or dispose of each substance they use? |
| <input type="radio"/> | Does the worker understand what control measures are in place at the workplace to reduce exposure and keep safe? |
| <input type="radio"/> | Has the worker been provided with the correct safety gear and PPE and does it fit properly? |
| <input type="radio"/> | Has the worker been trained to use the safety gear and PPE? |
| <input type="radio"/> | Does the worker know where the safety data sheets are kept and have access to them? |
| <input type="radio"/> | Has the worker been trained to use safety data sheets? |
| <input type="radio"/> | Does the worker know what to do in an emergency involving the substances they use? |
| <input type="radio"/> | Has the worker been trained to use the first aid equipment to deal with splashes and other incidents? |
| <input type="radio"/> | Has the worker had an appropriate period of practical experience under direct supervision reflecting the risks associated with the hazardous substances? |
| <input type="radio"/> | Does the worker understand the importance of asking their supervisor questions if they are unsure about how to safely use, handle or store a hazardous substance? |

Further information

Links to documents about managing hazardous substances risks can be found at: [worksafe.govt.nz](https://www.worksafe.govt.nz)

WorkSafe has also published quick guides on managing risk, with more information on the risk management process and on how you can give workers the training that they need. You can also find more information about exposure monitoring on WorkSafe's website.



4.0

Hazardous substance information

IN THIS SECTION:

- 4.1 Label all hazardous substances
- 4.2 Symbols on labels and signs
- 4.3 Safety data sheets
- 4.4 Signage

Labels, safety data sheets and signs are all sources of information to warn people about the risks of the hazardous substances at your workplace.

4.1 Label all hazardous substances

Manufacturers and suppliers must correctly label the products they sell you, but you must make sure that the label stays on the container and can be read.

Your workers must always read the label before using a hazardous substance so they know what they are dealing with.

Labelling decanted or transferred substances

It's always best to keep substances in their original containers. However, if you decant or transfer a hazardous substance from one container to another for ease of use or storage, make sure the receiving container is suitable for the substance and labelled.

It's never safe to have hazardous substances in unlabelled containers because people may not take the necessary safety precautions.

NEVER put hazardous substances in food or drink containers because people may eat or drink the content by mistake.

If you decant or transfer substances from their original container into smaller containers for use at the workplace, or mix substances in process containers at the workplace for your own use, the label needs to state the product or chemical name and include a hazard pictogram and hazard statement reflecting the substance's classification.




Hazardous waste

Waste that can be classified as hazardous also needs to be labelled to reflect its nature as closely as possible (eg chlorinated solvent waste), with a hazard pictogram based on its known or likely constituents, and the name, address and phone number of its producer.

4.2 Symbols on labels and signs

The symbols, also known as pictograms, that you will see on containers and signs are shown in the table on the following pages. You will see GHS symbols on labels and workplace hazard warnings and Transport of Dangerous Goods symbols on containers used for transporting hazardous substances.

Physical hazards

TYPE OF HAZARD	GHS SYMBOL	TRANSPORT OF DANGEROUS GOODS SYMBOLS
Explosives	Explosives are not dealt with by this guide. For more information on explosives, see WorkSafe's website.	
Flammables These symbols are for products that ignite easily and burn rapidly. Keep products with these symbols well away from oxidising products.		Flammable gases  or 

















TYPE OF HAZARD	GHS SYMBOL	TRANSPORT OF DANGEROUS GOODS SYMBOLS
		Flammable liquids  or 
		Flammable solids 
		Spontaneously combustible 
		Dangerous when wet  or 
Oxidisers These symbols are for products with oxidising properties. The products could be gas, solid or liquid and can cause or intensify fire and explosion. Keep products with these symbols well away from flammable products.		
Organic peroxides Organic peroxides may contribute to fire, explosion or chemical decomposition.		 or 
Corrosives Products with these symbols are corrosive and can cause severe skin burns and eye damage. They may also be corrosive to metals.		
Gases under pressure Products with these symbols are products where gas is kept under pressure. These products may explode when heated. If they are refrigerated gases they may cause cryogenic burns or injuries. Even normally safe gases can be dangerous when pressurised.		 or 

TABLE 1: Physical hazards

Health hazards






TYPE OF HAZARD	GHS SYMBOL	TRANSPORT OF DANGEROUS GOODS SYMBOLS
Acute toxicity Products with these symbols are acutely toxic. If you see these symbols on the label you need to be aware that you are handling very dangerous products that could cause death if they come into contact with skin or you inhale or ingest them.		Acutely toxic gas  Toxic 
Less severe acute health hazards Products with this symbol may cause one or more of the following: <ul style="list-style-type: none"> – skin sensitisation, skin and eye irritation – respiratory irritation, or – drowsiness or dizziness. 		No dangerous goods symbols
Chronic (long-term) health hazards Products with this symbol can cause chronic health issues if people are exposed to the product. These products can: <ul style="list-style-type: none"> – cause cancer – cause mutations – affect fertility – cause damage to an unborn child, and – cause allergies, asthma or breathing difficulties when inhaled. They can also be respiratory sensitisers.		No dangerous goods symbols

TABLE 2: Health hazards

Environmental hazards



TYPE OF HAZARD	GHS SYMBOL	TRANSPORT OF DANGEROUS GOODS SYMBOLS
Environmental hazard Products with this symbol are toxic to the environment (ecotoxic).		

TABLE 3: Environmental hazards

Signal words

You may also see signal words on the label such as **DANGER** and **WARNING**. **DANGER** is used for the most dangerous substances, while **WARNING** is used for less dangerous substances. Products imported from Australia might use the signal words **CAUTION**, **POISON** or **DANGEROUS POISON**. **CAUTION** is used for the least dangerous products while **DANGEROUS POISON** is used for the most dangerous substances.

Hazard statements

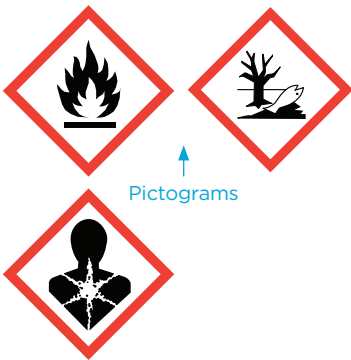
Hazard statements may also be on the label. These statements alert you to the harm that the product can cause for example, **MAY CAUSE MILD SKIN IRRITATION**.

Precautionary statements

Precautionary statements are phrases on the label that describe the recommended measures that should be taken to minimise or prevent adverse effects resulting from exposures to a hazardous product, or from improper storage or handling of a hazardous product, for example, **KEEP OUT OF REACH OF CHILDREN**, or, **USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA**.

The GHS label below shows some of the label features mentioned above.

Mineral Turpentine



Pictograms

DANGER ← Signal word

KEEP OUT OF REACH OF CHILDREN

Flammable liquid and vapour
May be fatal if swallowed and enters airways
Causes mild skin irritation
Toxic to aquatic life with long lasting effects

Hazard statements

Precautionary statements

↓

PREVENTATIVE MEASURES

Read label before use.
Keep away from heat and ignition sources. No smoking.
Keep container tightly closed when not in use. Avoid inhaling vapour, use only with adequate ventilation.
Wear rubber gloves and safety glasses when using or handling this product.

FIRST AID

If skin rash or irritation occurs get medical attention. Remove contaminated clothing and rinse skin with plenty of soap and water.
If swallowed, immediately call Poisons Centre (0800 POISON) or get medical attention.
Do NOT induce vomiting.
If medical advice is needed, have product or label at hand.

EMERGENCY RESPONSE MEASURES

In case of fire use CO₂ dry chemical or foam extinguisher.
Absorb spilled liquid with sand or inert material.

STORAGE

Store locked up, in a well-ventilated place and keep containers cool.

DISPOSAL

Avoid release to the environment. Do not allow to enter drains or waterways.
Dispose of this material and its container to a hazardous or special waste collection point.

Supplier information including emergency phone number

FIGURE 6:
Sample label

Further information

For more information on labelling, see our *Guide to Labelling, Decanting and Repackaging Hazardous Substances in the Workplace*.

4.3 Safety data sheets

You need to have a current SDS for each hazardous substance you use, handle, manufacture or store. You also need to understand its contents.

You must get an SDS from the manufacturer, importer or supplier of a hazardous substance when they first supply you with a substance, including when they supply a substance to your workplace for the first time in the last five years or for the first time after its SDS changes.

If you don't have an SDS for a hazardous substance, ask your supplier to give you one or ask for an updated SDS if your SDS is more than five years old.

Suppliers have a duty to provide a compliant SDS for every substance they supply to your workplace.

Safety data sheets usually include the following 16 headings:

Section 1	Product name and emergency telephone number of the manufacturer/supplier
Section 2	Hazards identification (this is where the classification should be)
Section 3	Composition/information on ingredients
Section 4	First aid measures
Section 5	Firefighting measures
Section 6	Accidental spill/release measures
Section 7	Handling and storage (may include information about incompatible substances and materials)
Section 8	Exposure limits and controls and PPE
Section 9	Physical and chemical properties
Section 10	Stability and reactivity (may include information about incompatible substances and materials)
Section 11	Toxicological information (this is where information on health effects can be found)
Section 12	Ecological information (this is where information on environmental effects can be found)
Section 13	Disposal considerations
Section 14	Transport information (this is where the UN class and packing group can be found)
Section 15	Regulatory information this is where (information on controls and the HSNO approval may be found)
Section 16	Other information

TABLE 4:
SDS headings

As the PCBU, you must read the SDS to find out the harm the hazardous substances at your workplace can cause and how you can protect your workers.

You need to explain the hazards of the hazardous substances to the workers who handle them and make sure they know how they can protect themselves.

An SDS can be difficult for people to understand, particularly if they have trouble reading or speak English as a second language, so take the time to explain this information to your workers and don't leave them to read the SDS on their own.

You can give your workers the key safety information in a condensed version (eg in product safety cards). Check with your supplier if a condensed version of the SDS is available for your hazardous substances.

Your workers and emergency service workers need to know where the SDS or its condensed version is stored and be able to access it quickly in the event of an emergency.

You may not need an SDS for hazardous substances in transit or held (and not opened) as consumer products in a retailer's workplace for supply to other premises, or consumer products in a workplace used in amounts and ways similar to domestic use.

For more information about safety data sheets and condensed versions, see our *Guide to Safety Data Sheets in the Workplace*.

4.4 Signage

Signs are required when you have hazardous substances over certain limits. Use the Calculator to help you work out whether you are required to have signs in place.



Even if you aren't required to have signs, it's best practice always to have them as they warn other people at the workplace and emergency services that hazardous substances are present. Emergency services use signs to plan their response and select appropriate PPE.

What to put on the sign

Signs must be made out of a durable material and must provide information about the substances that are present in plain English or in pictograms. Although sign content can vary depending on the substances present and the storage location, the sign below is an example of the key information you may see on a sign:

1. **HAZCHEM.**
2. **The hazardous property (ie the class) of the substance and the type of hazard (ie the subclass) of each substance present using pictograms and/or hazard statements.**
If you have multiple hazardous substance classifications present at your workplace in amounts over the threshold for signage, you need to show multiple hazards on your sign. For more information on classifications, see page 9. To see examples of the pictograms for different substances, see the table on pages 24-26 of this guide.
3. Emergency actions such as 'Call Emergency Services - Dial 111', or for ecotoxic substances, 'In an emergency protect waterways'.
4. For flammable or oxidising substances, precautions such as 'keep away' or 'no smoking', to prevent unintended ignition, combustion, or thermal decomposition.

FIGURE 7:
What to put on the sign

Example signs for diesel

Diesel has the classifications 3.1D, 6.1E, 6.3B, 6.7B and 9.1B. Only 3.1D and 9.1B trigger the signage requirement. Your sign must state that you have flammable substances on your site if you have 10,000 L or more of a 3.1D substance and that you have ecotoxic substances on your site if you have 1,000 L or more of a 9.1B substance.

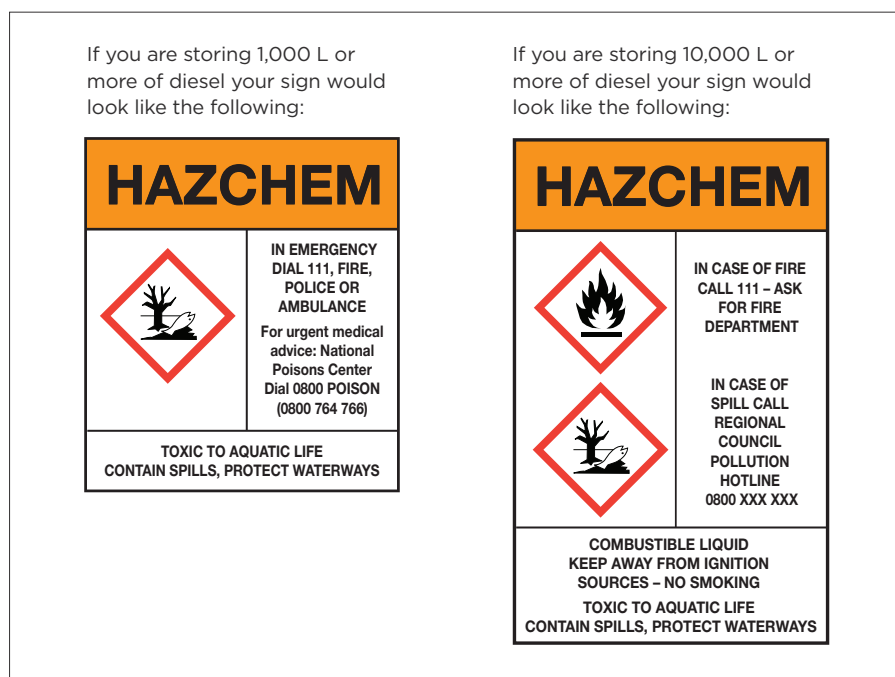


FIGURE 8:
Example signs for diesel

Where to put signs

Signs need to be placed close to where the hazardous substances are stored, but not too close, because people need to know that the danger is there before it's too late. Don't put signs:

- where they may be hidden
- beside doors or gates that cover the sign when the doors or gates are opened
- above doors, or anywhere smoke may conceal the sign.

The location of your signs will depend on what hazardous substances you have and where you store them. See our guide to signs for more detailed information, but as a general rule follow these guidelines:

- When hazardous substances are stored inside a building, place signs at each entrance to the building.
- If hazardous substances are stored in a particular room within a building, place a sign at the entrance to the room.
- You must also place a sign at the entrance to the land where the building is located.
- If the hazardous substances are located outdoors or in a tank, a sign must be positioned immediately next to that area or tank.

To be sure that your signs are correctly placed, take a look outside the building and inside around where hazardous substances are stored (around storage cabinets or dangerous goods stores) and ask 'How will emergency services know about the hazards they will face?'.

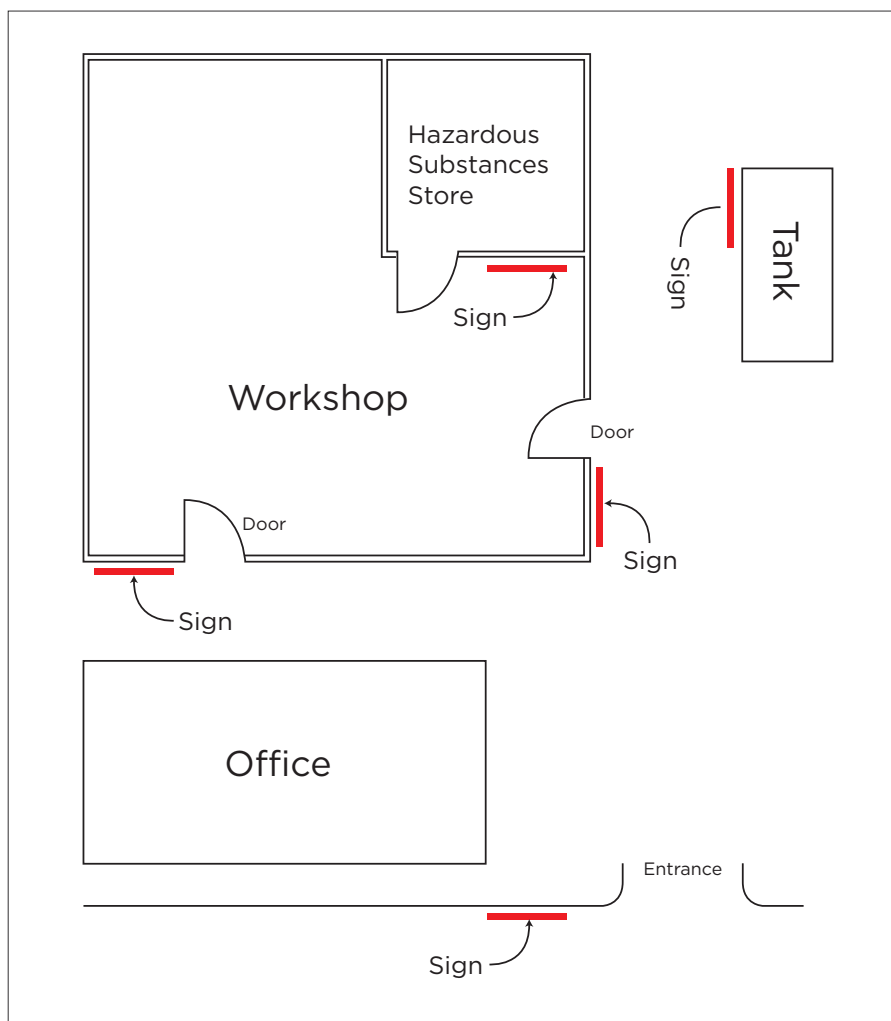



FIGURE 9:
Where signs should
be placed at a site

Where to get a sign

Safety equipment suppliers can provide you with the right signs. Check the Yellow Pages or the internet for safety equipment suppliers in your area.

Further information

The information above is a brief introduction to the requirements for signs. For more detailed information, including the requirements for specific substances and locations, see our *Guide to Hazardous Substance Signage*.



5.0

Store hazardous substances safely

IN THIS SECTION:

- 5.1 Decanting or transferring hazardous substances
- 5.2 Incompatibles
- 5.3 Store only what you need, store it safely
- 5.4 Gas cylinders
- 5.5 Oxy-acetylene welding
- 5.6 Flammable substances
- 5.7 Other substances

Storing hazardous substances safely is an important part of protecting yourself, your workers, other people at the workplace, neighbouring properties and the environment.

5.1 Decanting or transferring substances

It's best to keep hazardous substances in the containers they are bought in.

However, many businesses purchase hazardous substances in drums or large containers and then decant or transfer smaller amounts of the substance into other containers or mix substances in process containers for their own use. While this may seem like a simple task, it needs to be done safely to avoid accidents.

NEVER store hazardous substances in food or drink containers – it's just too easy for someone else to get confused about what's in the container – even if it is labelled. Too often people are seriously harmed after accidentally drinking hazardous substances stored in drink containers.

CHECKLIST

When you are planning to decant a substance from one container to another:

- ☐ Read the SDS and note the hazards of the substance, particularly whether it is flammable, toxic or gives off fumes.
- ☐ Wear the recommended PPE (eg eye protection, breathing protection, gloves and overalls) and make sure it fits properly. You may need eye wash stations and/or safety showers where transfers take place in case substances spill on workers.
- ☐ Ventilate work areas to prevent workers breathing in high concentrations of possibly poisonous vapours and gases and to prevent build-up of flammable vapours, which could ignite and cause a fire or explosion.
- ☐ Use only containers able to store the hazardous substance safely. Some substances can react dangerously with containers made out of different materials. For example, hydrochloric acid can react with some metals to form explosive hydrogen gas and hydrofluoric acid reacts with glass, so needs to be stored in a durable plastic container. Check the SDS or ask your hazardous substances supplier about incompatibilities.
- ☐ Make sure the new container is clean and doesn't contain any residues of other substances that may cause a violent reaction.
- ☐ Clearly label the new container with the product or chemical name of the substance, and a hazard pictogram and hazard statement consistent with its classification. All containers holding hazardous substances must be labelled, including containers of hazardous waste.
- ☐ Note that flammable liquids, like petrol, release flammable vapours, so you need to avoid sources of ignition when transferring flammable substances.
- ☐ Flammable liquids may also generate static electricity that may discharge and ignite the substance so make sure metal or conductive plastic containers are earthed or bonded correctly.
- ☐ Be prepared for any spill that might occur during transfer. Have your spill kit ready to clean up any spill. More information about spill kits can be found on page 41 of this guide in **Emergency Preparation**.

5.2 Incompatibles

Not all hazardous substances can be stored together safely. Different types of substances can cause a fire or explosion if they come into contact with each other. These substances are often described as ‘incompatible’ and must be stored separately to prevent them mixing in a leak or spill. Take care when storing acids and alkalis, as accidental mixing of concentrated materials will generate large quantities of heat and fumes.

The SDS for a hazardous substance will tell you which substances and materials it should be kept away from, but there is also some general guidance below.

HAZARDOUS SUBSTANCE TYPE	KEEP AWAY FROM
Flammable gases (class 2.1.1)	flammable aerosols (class 2.1.2) flammable liquids (class 3) flammable solids (class 4) oxidising substances (class 5) organic peroxides (class 5)
Flammable liquids (class 3)	all class 2 substances class 3.2 (liquid desensitised explosives) class 4 substances; oxidising substances
Oxidising substances (class 5.1)	all other types of hazardous substances (including organic peroxides)
Organic peroxides (class 5.2)	all other types of hazardous substances (including oxidisers)

TABLE 5:
Incompatible
substances –
general guidance

5.3 Store only what you need, store it safely


Keep the amount of hazardous substances you store to a minimum. This will make it easier to manage what you have and may reduce your compliance needs and costs.

Signage


Depending on the types and amounts of hazardous substances you have, you may need signs to warn people that hazardous substances are present. The signs should tell people about the hazards of the substances and the precautions and emergency actions to take. See pages 29-31 of this guide for more information.

Be prepared for a spill


Your workplace needs measures in place to control any hazardous substance spill or leak. For small spills, a spill kit might be sufficient to contain and clean up the spill. If you have large amounts of hazardous substances you are likely to need secondary containment (also known as bunding). See page 42 of this guide for more information.



The most important thing to remember is to:



Keep your flammables
(such as petrol, turps, solvent paints and thinners)



Away from oxidisers
(such as hydrogen peroxide, pool chemicals).

FIGURE 10:
Storage reminders

Put a lid on it!

Keep lids on your hazardous substance containers to keep vapours inside. This keeps vapour out of the air, and reduces the chance of spills.

5.4 Gas cylinders

Store and handle gas cylinders (including empty cylinders and SCBA or SCUBA cylinders) carefully. If a cylinder is weakened (eg due to incorrect storage or use, knocks or other damage), the risk of explosion increases. Store, handle and use cylinders upright, unless designed for horizontal use.

Types of cylinders

- Most general purpose LPG cylinders are designed for upright use.
- Vehicle and forklift cylinders are designed for horizontal use although forklift cylinders can normally be handled and stored vertically.
- Self-contained breathing apparatus (SCBA) or self-contained underwater breathing apparatus (SCUBA) cylinders can normally be handled and stored horizontally.
- Acetylene cylinders contain acetone as a gas solvent and must be used upright to avoid the possibility of acetone being discharged with the acetylene. If transported horizontally, they must be stood upright for at least one hour before use.

Testing gas cylinders

Have gas cylinders tested at gas cylinder test stations to ensure that they remain safe to use. Poorly maintained gas cylinders may leak, which could expose workers to hazardous substances or potentially cause an explosion.

CHECKLIST

Store any gas cylinder in a location that:

- ☐ is suitable for the type and quantity stored
- ☐ is secure (ie the cylinder is locked up, chained or in a cage)
- ☐ is well ventilated, and
- ☐ has an emergency response plan and signs in place, if required.

For flammable gases, the location must also be:

- ☐ built to be fire resistant
- ☐ suitably separated from potential sources of ignition (also required if the gas is an oxidiser).

Fire extinguishers must also be available (also required if the gas is an oxidiser).

It's good practice for the cylinders to be protected from the weather.

5.5 Oxy-acetylene welding

Oxy-acetylene welding equipment is one of the few exceptions where incompatible hazardous substances (acetylene, a flammable gas, and oxygen, an oxidiser) are allowed to be used together. Because these substances are incompatible, it's vitally important to make sure the gas cylinders containing them are correctly maintained. If your workplace keeps spare acetylene and oxygen cylinders, store them separately to minimise the potential for harm if an incident involving a set of cylinders occurs.

Welding activities can cause workplace fires, so take all necessary safety precautions when welding. Oxy-acetylene welding kits must have flashback arrestors fitted – if the item being welded ignites, the flashback arrestors stop the flame from travelling down the lines to the cylinders.

WorkSafe has a page on its website about health and safety in welding. Search for 'welding' on WorkSafe's homepage: [worksafe.govt.nz](https://www.worksafe.govt.nz)

5.6 Flammable substances

Storage cabinets

You can store up to 250 L of flammable liquids in an approved flammable goods cabinet as long as each container is not greater than 20 L in size.

However, a cabinet is not required where the aggregate quantity of flammable liquids present is less than or equal to:

- a. 15 L, for class 3.1A or 3.1B substances kept in securely closed containers with a capacity of 5 L or less; or
- b. 100 L, for class 3.1C substances; or
- c. 500 L, for class 3.1D substances.

The cabinet must comply with Australian Standard *AS 1940-2004: The storage and handling of flammable and combustible liquids*; or *BS EN 14470-1:2004 Fire safety storage cabinets. Safety storage cabinets for flammable liquids*. Ask your safety supplier for help in selecting appropriate cabinets if needed.

You may need to keep very large amounts of flammable liquids in a dangerous goods store or separate building.

Ask a compliance certifier or a safety consultant to find out how you can safely store your substances.

Flammable vapour

Flammable liquids release vapour, which can cause an explosion if accidentally ignited.

You need adequate ventilation when using or storing flammable liquids to prevent build-up of flammable vapours.

IGNITION

Remove ignition sources where flammable liquids are used and stored. Some common ignition sources are listed below.

The following table was taken from Safe Work Australia's code of practice: *Managing Risks of Hazardous Chemicals in the Workplace*.

Examples of ignition sources:

IGNITION SOURCE	EXAMPLE
Flames	- Welding, gas heaters, pilot lights.
Sparks	- Welding arcs, starters for fluorescent lighting, electric motors, electrical equipment like power points, cigarette lighters, switches, telephones. - Static electricity, including from friction.
Heat	- Hot surfaces including light bulbs, ovens, radiators or heaters, flue pipes, vehicle engines and exhaust systems (eg forklifts) pumps and generators.

TABLE 6:
Ignition sources

HAZARDOUS AREAS

A hazardous area identifies where flammable vapours may be present, requiring special precautions to prevent ignition.

Its dimensions depend on factors including the hazardous substances present and the ventilation in place. Generally, a hazardous area extends out 3 m from a dangerous goods cabinet or store and 1 m above.

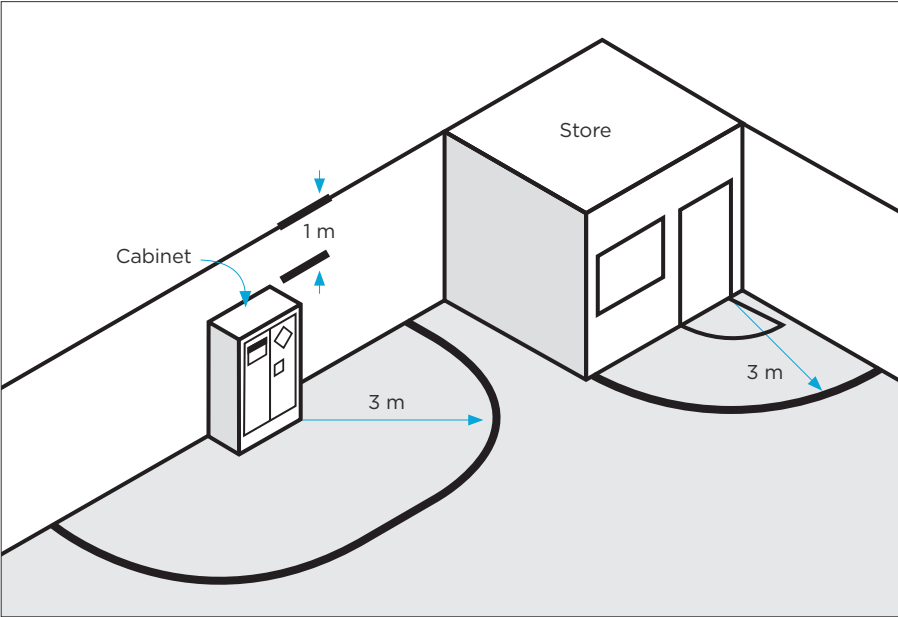


FIGURE 11:
Hazardous area

Within each area, you need to consider potential ignition sources. Keep ignition sources out of hazardous areas. If you must have electrical equipment in these areas it must be intrinsically safe.

If you aren't sure whether your electrical equipment is intrinsically safe:

- get advice, or
- if necessary, get an electrical certificate from a registered electrical inspector.

5.7 Other substances

Storing toxic and corrosive substances

If you store toxic and corrosive substances in a package store, the store needs to meet design requirements so that it is secure and there is secondary containment for spills. Safety equipment must also be available.

Standards apply to the design of storage cabinets. Indoor storage cabinets for class 6.1A, 6.1 B or 6.1C substances need to meet AS/NZS 4452:1997, while indoor storage cabinets for class 8.2A and 8.2B substances need to meet the design requirements in AS 3780-2008.

There are limits to the amounts of these substances that can be held in these cabinets. The maximum quantity of class 6.1A, 6.1B, or 6.1C substances kept in a single indoor storage cabinet cannot exceed 250 kg or 250 L, and of this no more than 25 kg or 25 L may be class 6.1A and no more than 50kg or 50L may be class 6.1B or 6.1C.

The maximum quantity class 8.2A or class 8.2B substances kept in a single cabinet cannot exceed 1000 kg or 1000 L, of which not more than 50 kg or 50 L may be class 8.2A and not more than 250 kg or 250 L may be class 8.2 B.

In both cases, you must avoid storing incompatible substances or substances that could react dangerously with each other.

Because there are a number of specific requirements, if you are storing these substances, we recommend you read our *Guide to Storing Class 6 & 8 Substances*.

Location compliance certificates

If you have flammable, oxidising, or solid or liquid toxic or corrosive substances at your workplace above certain thresholds you may need a location compliance certificate to certify that the hazardous substances are being stored safely and according to the rules. The Calculator will let you know whether you need a location compliance certificate.

See pages 47-48 of this guide for more on location compliance certificates.



6.0

Emergency preparation

IN THIS SECTION:

- 6.1** Prepare for an emergency
- 6.2** Spill kits
- 6.3** Control measures in the
Hazardous Substances
Calculator

Even the most safety conscious organisation can have an emergency. So you, your workers, and emergency service workers need to know what to do, and who is responsible for what in an emergency.

Possible emergencies involving the hazardous substances you use and store at your workplace include:

- a worker being poisoned by ingesting or inhaling a toxic substance
- a worker being burnt by a corrosive substance
- a fire caused by flammable or oxidising substances, or
- hazardous substances leaking or spilling from their containers, injuring people and contaminating land and waterways.

6.1 Prepare for an emergency

How you prepare for an emergency depends on the types and amounts of hazardous products you use and store. Some actions to keep safe are always required, while others are required only if you have substances over certain limits. The checklist below tells you what you always need to do when using and storing hazardous products. The Calculator will help you work out whether you need fire extinguishers, signs, secondary containment or an emergency response plan.



CHECKLIST

To be ready for and prevent emergencies

- ☐ **Train your workers** about what to do in an emergency. They also need to know where the safety and first aid equipment is stored and how to use it.
- ☐ **Make sure your inventory is accessible to any emergency service worker**, both during an emergency and after the workplace has been evacuated.
- ☐ **Label all hazardous products** and make sure the label is readable and stays on the container. If you transfer a hazardous product from one container into another one, you must make sure that the new container is also labelled.
- ☐ **Have a safety data sheet** for each hazardous product at your workplace. Store the SDS in a place where workers and emergency services can easily locate them. See pages 28-29 of this guide for more information.
- ☐ **Store incompatible products separately**. Make sure you keep hazardous substances that can react with one another separate. Check the SDS to find out what your product is incompatible with. See page 34 of this guide for more information.
- ☐ **Store oxidisers safely**. There are particular precautions for storing oxidisers, such as keeping them away from combustible material.
- ☐ **Be prepared for a spill** or leak of the hazardous substances you use, handle, manufacture and store. The safety data sheet for each of your substances will give you information about how to clean up spills. There is some general guidance in section 6.2 of this guide.
- ☐ **Make sure any hazardous waste is labelled**.

6.2 Spill kits

You need to be prepared to deal with a spill or leak of the hazardous substances you use, handle, manufacture and store. For small spills, a spill kit might be sufficient to contain the spill. You can purchase spill kits from safety equipment suppliers or make a kit to suit your needs. The equipment needed in your spill kit will depend on what hazardous substances you have and the amount that could possibly be spilled.

CHECKLIST

Generally, your spill kit should contain:

- ☐ PPE like overalls, gumboots, gloves, goggles and facemasks
- ☐ spill handling equipment like shovels, but be aware that metal shovels could spark, which is dangerous when you are cleaning up a spill involving flammable substances
- ☐ spill containment equipment like drain guards or barriers, or drip pans
- ☐ absorbent material like absorbent pads, sand (note that sawdust is not a suitable absorbent for flammable or oxidising substances because it acts as a fuel in a fire)
- ☐ a leak-proof disposal container to put the waste in once the spill is cleaned up.

You need to make sure that your workers know where the spill kit is kept and how to use it.

6.3 Control measures in the Hazardous Substances Calculator

The *Hazardous Substances Calculator* will tell you which of the following equipment and other measures you need:



Fire extinguishers

Fire extinguishers put out fires before they reach your hazardous substances to prevent a more serious situation from occurring.

You must have fire extinguishers if you have amounts of flammable or oxidising substances over certain limits.

However, you should always have suitable fire extinguishers if you use or store any flammable, oxidising or toxic substances.

If you need fire extinguishers, you need to make sure:

- you have the correct number of fire extinguishers
- your fire extinguishers are clearly seen and readily accessible in an emergency
- your fire extinguishers are of a sufficient standard. Fire extinguishers must have a rating of at least 30B.

You can make your fire extinguisher readily accessible by placing it in a prominent place along pathways people usually use in your workplace and where it will be easily accessible to emergency services in an emergency.

Ask your equipment supplier for help when selecting fire extinguishers.

Remember that as part of your duty to train your workers, you need to make sure that workers know how to operate emergency response equipment.

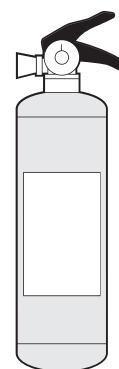


FIGURE 12:
Fire extinguisher

Signs

You should have signs when you have hazardous substances over certain limits. However, always have signs warning visitors and emergency services that your workplace has hazardous substances. The Calculator will tell you if you need to have signs. See also pages 29-31 of this guide for more information.



Secondary containment

A spill kit will not be sufficient to contain a large spill. If you store large amounts of hazardous substances you will need secondary containment to keep the spill from spreading and help recover the spilled substance. Use the Calculator to work out if you need secondary containment.



There are specific requirements for certain container types, sizes, and locations. Below are some examples of different secondary containment requirements however it is not a complete list.

Secondary containment for above-ground tanks and drums is commonly a compound with bund walls to contain any leaked substance.

Secondary containment for above-ground stationary container systems that can hold 250 L or more must be able to contain at least 110% of the capacity of the largest container.

Secondary containment for below-ground tanks is normally a double skinned stationary tank or a tank in an impermeable pit with secondary containment that is able to contain at least the capacity of the tank.

Farms have specific requirements for secondary containment, as do tank wagons.

Visit WorkSafe's website for guidance on the secondary containment requirements for specific substances in different locations and containers.

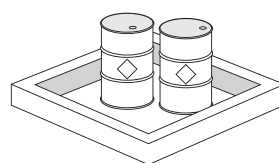


FIGURE 13:
Secondary containment

Emergency response plans

If you have large amounts of hazardous substances in your workplace, you must have a written emergency response plan to minimise the effects of any emergency that occurs, although it's best practice always to have one.

Use the *Hazardous Substances Calculator* to work out if you need an emergency response plan. Your response plan must cover all the emergencies that might arise for the hazardous substances you have and you must practise it with your workers.



Fire and Emergency New Zealand can review the plan to check that any roles proposed for them in it are achievable and consistent with their operational policies and identify anything that could affect operations in an emergency. They may ask for more details to clarify their role in the plan and the resources they will need.

If Fire and Emergency New Zealand makes a written recommendation about the plan, the plan must be amended to give effect to the recommendation.

CHECKLIST

Your plan must include a description of what you will do to:

- ☐ call emergency services
- ☐ warn people at the workplace and nearby about the emergency
- ☐ advise people how they can protect themselves and how they can help other people involved in the emergency
- ☐ help or treat anyone who is injured in the emergency
- ☐ manage the emergency to restrict the adverse effects to the initial area, reduce their severity and if possible, eliminate them.

The plan must also:

- ☐ name the people with specific responsibilities (such as fire wardens or first aiders) and provide contact information for these people and for emergency services
- ☐ list the skills, information, training and instruction these people need to have to respond to emergencies involving the substances, and the actions they are expected to take
- ☐ describe how to get information about the hazardous properties of the substances involved in the emergency and how to control these properties
- ☐ state where to find emergency equipment and its purpose
- ☐ list the actions for each potential emergency and the order in which they need to be taken
- ☐ be available to all people listed in the plan as having responsibilities, and to emergency services
- ☐ include an inventory of hazardous substances
- ☐ include a site plan.

You also need to

- ☐ test your emergency response plan at least once a year to check that it works and is effective. If any problems are identified you need to update your plan. You must keep records of tests for at least two years.

Update the plan if there are changes to the hazardous substances used and stored at your workplace, or to the workers with specific emergency responsibilities. If the plan is updated, it must be tested within three months of the update.

The *Emergency Response Flipchart* is a template of what an emergency response plan should look like. You can find the *Emergency Response Flipchart* at: www.hazardoussubstances.govt.nz

You may also need a fire evacuation scheme

You might also need to have an evacuation scheme in place, approved by Fire and Emergency New Zealand who has a useful website to provide you with guidance about Fire Evacuation Schemes: <https://onlineservices.fire.org.nz>

The flipchart is titled 'Emergency Response' and features the WorkSafe NZ logo. It contains the following sections:

- The first priority in an emergency is the safety of all people present**
 - 1. Stop the release of the hazardous substance or isolate the area
 - 2. If you need to call emergency services, call them as soon as possible after ensuring the safety of all people present
 - 3. Give your plan to the police, fire and ambulance and give them the information they need to respond to the emergency
 - 4. Give the police or police officer at the incident the information they need to respond to the emergency
- Calling emergency services**
 - 1. Call from a safe place
 - 2. Give the location or describe the place if possible
 - 3. Tell the operator which emergency service you need
 - 4. Give the operator your name
 - 5. Give the following address
- Emergency contact details**
 - Emergency services
 - Fire response
 - Spill response
 - LPG tank response
 - Cardiovascular resuscitation (CPR)
 - Emergency first aid
 - When disaster strikes
 - Emergency equipment
 - Responsibilities and testing the plan
 - Reviewing and updating of the plan
 - Inventory, SDS and site plan
 - Other emergencies

FIGURE 14:
Emergency Response
Flipchart



7.0

Compliance certificates

IN THIS SECTION:

- 7.1 What are compliance certificates?
- 7.2 Certified handler compliance certificates
- 7.3 Approved filler certificate
- 7.4 Location compliance certificates
- 7.5 Stationary container system compliance certificates

7.1 What are compliance certificates?

Compliance certifiers are independent service providers approved by WorkSafe to issue compliance certificates for:

- people (certifying their knowledge and training)
- locations (certifying that controls are in place for the location where hazardous substances are stored or used)
- equipment (certifying that equipment meets the required specifications).

You can find a list of compliance certifiers on WorkSafe's website. Compliance certifiers set the cost of issuing or renewing certificates. Contact several certifiers to discuss their services and fees.

7.2 Certified handler compliance certificates

A certified handler is certified to handle certain very hazardous substances (class 6.1 A and 6.1 B toxic substances and substances that require a CSL, such as most explosives, fumigants and vertebrate toxic agents (VTAs)).

In addition to practical and supervised workplace experience, a certified handler has to know and be able to describe:

- the hazard classifications, properties and adverse effects of the substances they deal with and how to protect people and the environment from them
- any requirements under the Regulations or the HSNO Act, and/or any applicable safe work instrument for that substance, in other words, what the law requires and why
- any conditions on the person's certified handler compliance certificate
- how to prevent the substance from causing injury or illness to anyone at the workplace
- what to do in an emergency involving the hazardous substances
- PPE and other equipment for handling the substances (the person will also need practice and supervised workplace experience in using these items)
- how to work with the substance, including procedures for its safe use, handling, manufacture, storage, or disposal
- the person also needs to receive information, training and instruction about the substance. See pages 20-21 of this guide for more details.

A hazardous substance that usually needs to be under the personal control of a certified handler may be handled by another person if a certified handler:

- is present at the location when the hazardous substance is used
- has provided guidance to others who may then handle the substance
- is available to provide guidance if needed.

This guidance could include ensuring that the person who will handle the substance receives the required training.

Use the Calculator to find out whether you need a certified handler.

If you need a certified handler at your workplace, contact a compliance certifier, who will check that the worker who wishes to become a certified handler has sufficient training to safely handle the hazardous substances they will need to use.

You may need more than one certified handler to cover shift work, holidays and sick days.



This training may be provided by an industry training organisation or could be on-the-job training. To become certified, that person will need a written record of the training, describing the method used to assess their knowledge and practical skills, and signed by the course provider.

If the training was provided at work, the supervisor or manager will need to provide a signed, written record.

In either case, the compliance certifier must be assured of the quality of the training.

A certified handler certificate must be renewed every five years. It is important to keep a secure copy of the certificate, as it will be required for the certificate to be renewed.

Becoming a certified handler

Learn and get experience

Learn about the hazards of the substances, how to safely manage them, how to protect people and the environment from those substances and what to do in an emergency.

Learn with an industry training organisation or through on-the-job training.



Prove knowledge and competence

Obtain a written record describing the method used to assess your skills and knowledge about the substances. Have this record signed by your work supervisor or course provider.



Contact a compliance certifier

Contact a compliance certifier who specialises in certified handler certificates for the substances you want to be certified to use. There is a list of compliance certifiers on the WorkSafe website.



Obtain a certified handler compliance certificate

If the compliance certifier is satisfied you have the knowledge, experience and competence, they will issue a compliance certificate, valid for five years.

7.3 Approved filler certificates

Everyone at your business who fills gas containers must have an approved filler certificate or be trained to become an approved filler and be under the supervision of an approved filler. This is required for filling containers of all gases under pressure at the workplace, whether they are hazardous or not, including air.

An approved filler is someone with the necessary training, knowledge and

skills to fill gas containers safely and an approved filler certificate from a compliance certifier.

For each gas the approved filler will be certified for, the approved filler must know:

- how to fill gas containers safely
- about the different forms of gases under pressure, including:
 - low-pressure and high-pressure liquefiable gas
 - permanent gases
 - gases that may be held at very low temperatures
- the causes of gas container failure
- the consequences of failure of a gas container – including asphyxiation, and
- how to inspect a gas container to make sure it is safe.

To get an approved filler certificate, the worker will need to prove their knowledge to a compliance certifier by providing a written record describing their training, how their skills were assessed and the results of the assessment signed by either their work supervisor if they were trained at work, or by the course provider if they completed a training course.

The worker will also need to demonstrate the procedures for safely charging gas containers.

When the compliance certifier issues an approved filler certificate they will specify the type of gas as well as the types of containers the certificate holder may fill. The certificate is valid for up to five years.

Filling LPG cylinders

The LPG Association offers a training scheme to businesses that fill LPG cylinders. Through this scheme a worker can be trained, assessed and issued with their approved filler certificate at their workplace by a site trainer who is also a compliance certifier. An LPG Association approved filler can only fill cylinders at the workplaces where they were trained and they must have refresher training and renew their certificate each year.

Test stations

Gas cylinder test stations are authorised to inspect and test gas cylinders.

7.4 Location compliance certificates

If you have flammable, oxidising, toxic or corrosive substances at your workplace you may need a location compliance certificate.

A location compliance certificate certifies that the hazardous substance location (HSL) where the substances are used and stored is safely managed, according to the rules.

Use the Calculator to find out whether you need a location compliance certificate. If you need one, you must arrange for a compliance certifier to visit your workplace.



CHECKLIST

Before issuing a location compliance certificate, the compliance certifier will check that you have:

- ☐ an inventory of hazardous substances on site
- ☐ a site plan of your workplace showing:
 - all hazardous substance locations
 - hazardous areas and
 - controlled zones
- ☐ fire extinguishers, if needed, and that:
 - you have the correct number of fire extinguishers
 - you have the correct type of fire extinguishers (with a rating of at least 30B), and
 - the fire extinguishers are clearly seen and readily accessible in an emergency
- ☐ hazardous substances stored safely in areas that can be secured in the correct type of building or cabinet
- ☐ ensured that the specific storage requirements for class 6 (toxic) and 8 (corrosive) and any other substance classes are met
- ☐ incompatible substances stored separately
- ☐ established and managed hazardous areas
- ☐ a certified handler available, if needed
- ☐ ensured that any workers requiring information, instruction and training have received them
- ☐ procedures to prevent fires if you store flammable or oxidising substances
- ☐ signs in place, if needed
- ☐ an emergency response plan, if needed
- ☐ secondary containment in place, if needed
- ☐ the right PPE for the substances workers handle
- ☐ clean up materials for any substances that require them, and
- ☐ told your local WorkSafe office where the hazard is and what hazardous substances are used and stored there and in what quantities.

You can find a more detailed list of what compliance certifiers must certify inside an HSL for different substances by searching for the performance standards for compliance certifiers on the WorkSafe website.

A location compliance certificate lasts for one year but this can be extended up to a maximum of three years. Talk to your compliance certifier about this extension.

7.5 Stationary container system compliance certificates

A stationary container system is a fixed tank or process container and its associated pipework and fittings, covering above and below-ground tanks, fuel tanks connected to burners, stationary internal combustion engines and direct fired vaporisers.


If you have a stationary container system containing a gas or liquid hazardous substance you may need a stationary container system compliance certificate to certify that your tank and associated equipment is safe and complies with the rules. When you enter your substances into the Calculator it will let you know whether you need a compliance certificate for your stationary compliance system.



To get a stationary container certificate, contact a compliance certifier.

Further information

WorkSafe has published a guide called 'Certification of Stationary Tanks and Process Containers'. Contact WorkSafe for a copy or visit WorkSafe's website: [worksafe.govt.nz](https://www.worksafe.govt.nz) for a link to this document.



8.0

Tracking very hazardous substances

IN THIS SECTION:

- 8.1 Where does tracking start?
- 8.2 The competent person's responsibilities
- 8.3 Keeping tracking records
- 8.4 Information needed in tracking records

Some very hazardous substances must be tracked, recording what happens to them from when they were imported into New Zealand or manufactured, through their distribution and transport, to their final use or disposal.

Tracked substances can only be transferred to competent persons. The Calculator will let you know if your substances have tracking requirements.



Some examples of tracked substances are embalming substances or cyanide in the metal working industry.

Tracking highly hazardous substances makes sure that:

- these substances are under the control of an appropriately trained person (tracked substances must be under the control of a competent person, if not, they must be appropriately secured)
- if the substances are held in transit, the place meets the requirements for a transit depot, and
- tracked substances are stored at a site that has a location compliance certificate (if one is necessary).

8.1 Where does tracking start?

If the substance is manufactured in New Zealand, tracking starts at the premises where it was manufactured.

If the substance is imported into the country, tracking starts at the port where the substance enters New Zealand.

8.2 The competent person's responsibilities

Any hazardous substance requiring tracking must be under the responsibility of a competent person or appropriately secured throughout its lifecycle.

A competent person is either a certified handler, or a person who has received the information, instruction and training required to work with the substance.

If a tracked substance is transferred:

- the conditions and circumstances of its transfer must be recorded, and
- a competent person must be identified at the destination.

A tracked substance must be either:

- under the personal control of a competent person, or
- appropriately secured at all times.

8.3 Keeping tracking records

If you are the PCBU of a site where tracked substances are used and stored, you are responsible for keeping tracking records.

Tracking records must be readily accessible to workers or competent persons who handle the substance and readily understandable to a competent person required to have access to the substance. This means that these people know where to find the record, and that it uses commonly understood terminology.

An inspector must be able to find the substance location on the tracking record in two minutes, and find the substance or its container at the place stated on the record in one hour or the time specified on the emergency response plan, whichever is shorter.

The records must be kept for 12 months after the substance has been transferred to someone else.

If the substance is discharged into the environment or otherwise used or disposed of, the record must be kept for three years.

8.4 Information needed in tracking records

The tracking record must contain:

- the name, position and contact details of the competent person in control of the substance, including the physical address of the place of work
- if applicable, the hazard classifications of each phase of the lifecycle of the substance for which the person has a certified handler certificate and the expiry date of the certified handler certificate
- the product or chemical name and amount of the tracked substance under the control of the competent person at any one time
- the exact location of the substance allowing an inspector to locate the substance within the times mentioned above
- details of any transfers of the substance to another location such as the product or chemical name of the transferred substance, the identity and address of the PCBU receiving it and the date of transfer
- information about the disposal (including use) of the tracked substance, including how, when and where it was disposed of and the quantity disposed of
- the unique identifiers of containers for vertebrate toxic agents (VTAs) containing certain active ingredients.

Further information

See WorkSafe's website for more detailed guidance on tracking.

Appendices

IN THIS SECTION:

Appendix 1: Resources

Appendix 2: Glossary

Appendix 1: Resources

For information about individual hazardous substances, contact your hazardous substance supplier.

WorkSafe

If you have any specific questions about managing hazardous substances contact WorkSafe's Hazardous Substances Information Line: 0800 376 234.

WorkSafe's website: worksafe.govt.nz is regularly updated with information and new documents relating to hazardous substances.

You can find the Calculator, the *Emergency Response Flipchart*, and other resources on the Hazardous Substances Toolbox website at:

www.hazardoussubstances.govt.nz

To find a compliance certifier, go to the compliance certifier register on the WorkSafe website: worksafe.govt.nz

Correlation between GHS and HSNO classes

The correlation between the GHS categories and the HSNO classes can be found on the EPA website: epa.govt.nz

Emergency response plans

To assist you in preparing your emergency response plan the *Emergency Response Flip Chart* is available from WorkSafe. You can download it from: www.hazardoussubstances.govt.nz

Your local council

Your council might have additional rules that need to be met when storing hazardous substances. Check with your local council for specific rules that apply in your region.

Appendix 2: Glossary

This section explains some of the terms you will come across in this document. If any of the words within the explanation are italicised there is also an explanation for that word elsewhere in this section.

TERM	DEFINITION
Approvals and approval numbers	<p>If you are importing, manufacturing or using <i>hazardous substances</i>, they must be approved under the Hazardous Substances and New Organisms (HSNO) Act.</p> <p>Once they are approved they are given an approval number and a set of controls that people using the substances need to follow to help manage the <i>risks</i> associated with the substance. The approval number will generally be found in Section 15 (the Regulatory Section) of your <i>safety data sheet</i> and will be of the format HSR00XXXX.</p> <p>Most domestic and workplace <i>hazardous substances</i>, other than pesticides, are approved under a group standard approval. An example of a group standard approval number is HSR002662 Surface Coatings and Colourants (Flammable).</p>
Approved filler	An approved filler is someone who has the necessary training, knowledge and skills to fill gas containers safely and has obtained an approved filler <i>compliance certificate</i> from a <i>compliance certifier</i> .
Certified handler	A certified handler is someone who has specific knowledge and experience on how to use particular very <i>hazardous substances</i> safely. This person needs to apply to a <i>compliance certifier</i> to get an approved handler <i>compliance certificate</i> .
Classification	The properties of a substance are classified according to their <i>hazards</i> . Based on the classification, <i>controls</i> are set to manage the risks that arise from these hazards.
Compliance certificates	Compliance certificates are a type of certification issued by <i>compliance certifiers</i> to show that users of <i>hazardous substances</i> have appropriate <i>controls</i> in place or have the appropriate knowledge and training. You might need a compliance certificate for people, locations or equipment.
Compliance certifier	A compliance certifier is an independent service provider approved by WorkSafe to issue <i>compliance certificates</i> . You can find a list of compliance certifiers on the WorkSafe website: worksafe.govt.nz
Controlled substance licence	A controlled substance licence (CSL) is required to possess certain explosives, vertebrate toxic agents and fumigants. To obtain a CSL, a person must be a certified handler and a fit and proper person to possess the substance concerned.
Controls	Controls are rules put in place to prevent or manage the adverse effects of <i>hazardous substances</i> . The controls for substances differ depending on their hazard <i>classification</i> .
Dangerous goods	<p>The term 'dangerous goods' is used internationally to describe the goods covered by the United Nations Recommendations on the Transport of Dangerous Goods Model Regulations. Dangerous goods are not exactly the same as <i>hazardous substances</i>.</p> <p>For example, radioactive materials and infectious substances are also considered to be dangerous goods but are not classified as <i>hazardous substances</i>. Additionally, substances that cause skin irritation are <i>hazardous substances</i> but not dangerous goods.</p>
Emergency response plan	An emergency response plan is a written document that covers what will be done and who is responsible for each task in an emergency involving <i>hazardous substances</i> at your workplace.
Globally Harmonized System (GHS) of Classification and Labelling of Chemicals	<p>The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is a single internationally agreed system of <i>hazardous substance classification</i> and hazard communication through labelling and <i>safety data sheets</i> (SDS).</p> <p>GHS has been adopted by many countries around the world and the classification and labelling system will be seen more often. The <i>HSNO</i> classification system is based on the GHS system.</p>
Hazard	A hazard is any source of potential damage, harm or adverse effect (including health effects).
Hazardous area	<p>A hazardous area surrounds a place where flammable substances are used or stored and flammable vapours may be present.</p> <p>Within these areas, special precautions need to be taken to prevent unintended ignition so that a fire or explosion does not occur.</p>

TERM	DEFINITION
Hazardous substances	<p>A hazardous substance is a substance classified as having one or more of the following properties:</p> <ul style="list-style-type: none"> – an explosive nature, including fireworks – flammability, for example, petrol, turps, LPG, diesel – ability to oxidise, accelerate a fire, for example hydrogen peroxide – corrosiveness, for example, caustic drain cleaner
	<ul style="list-style-type: none"> – acute or chronic toxicity to humans, for example, arsenic – ecotoxicity, able to kill living things either directly or by building up in the environment (eg diesel, glyphosate pesticides).
Hazardous substance location	<p>A hazardous substance location (HSL) is a place where specific <i>controls</i> are put in place in order to safely store certain <i>hazardous substances</i> above specified amounts. You must establish an HSL (or hold the substances in a transit depot) if you hold tracked substances in a place for more than 2 hours or if you hold untracked substances in a place for more than 24 hours. You will need a <i>location compliance certificate</i> for some HSLs.</p>
HSNO	<p>HSNO refers to the Hazardous Substances and New Organisms Act 1996 and supporting regulations. Under HSNO, the Environmental Protection Authority (EPA) approves substances and sets environmental controls top of the supply chain controls for manufacturers and importers for matters such as packaging and disposal or the content of labels or <i>safety data sheets</i>.</p>
HSWA	<p>HSWA refers to the Health and Safety at Work Act 2015. The main purpose of HSWA is to provide a balanced framework to ensure the health and safety of workers and others.</p>
Incompatible substances	<p>Incompatible substances are substances that must be kept away from each other to prevent them from mixing and causing a fire or explosion.</p>
Inventory	<p>An inventory is a list of all <i>hazardous substances</i> used, handled, manufactured and stored at your workplace.</p>
Location compliance certificate	<p>A location compliance certificate certifies that the place where <i>hazardous substances</i> are used and stored is safely managed, according to the rules. <i>Compliance certificates</i> are issued by <i>compliance certifiers</i>.</p>
PCBU	<p>This is the abbreviation for Person Conducting a Business or Undertaking. The PCBU is a key duty holder in workplace health and safety, and may be an organisation (eg a company), or a person (eg a sole trader).</p> <p>A business is an activity carried out with the intention of making a profit or gain.</p> <p>An undertaking is an activity that is non-commercial in nature, such as by a not-for-profit group.</p>
Personal protective equipment (PPE)	<p>PPE is used to handle <i>hazardous substances</i>. It can include respiratory protective equipment (RPE). As the PCBU, you must make sure that suitable PPE is provided to your workers, that it fits them, and that it is properly maintained.</p>
Regulations	<p>Regulations are rules that must be complied with under a specific Act, such as the Health and Safety at Work Act.</p>
Risk	<p>Risk is the combination of the likelihood of adverse effects occurring and the magnitude of the effects, if they were to occur.</p>
Safety data sheet (SDS)	<p>A safety data sheet includes information about how to safely use and store a <i>hazardous substance</i>, first aid information and what to do in an emergency. Safety data sheets must be provided by your supplier when you purchase a <i>hazardous substance</i> for the first time.</p>
Secondary containment (bundling)	<p>A secondary containment system ensures that liquid substances (or liquefiable substances) can be contained if they leak or spill from the container in which they are stored. The system should also enable recovery of a spilled substance.</p>
Stationary container system	<p>A stationary container system is a fixed tank and its associated pipe work and fittings. If you have a stationary tank containing a gas or a liquid hazardous substance you may need a stationary container system compliance certificate. This certifies that your tank is safe and complies with the rules.</p>
Test station	<p>Test stations are authorised to inspect and test gas cylinders.</p>
Tracking	<p>Tracking refers to recording what happens to very <i>hazardous substances</i> from their manufacture through to use or disposal.</p>

Disclaimer

WorkSafe New Zealand has made every effort to ensure the information contained in this publication is reliable, but makes no guarantee of its completeness. WorkSafe may change the contents of this guide at any time without notice.

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