# Procedure

# Hazardous Chemicals

## Document number: PRO-00008



| Ver No. | Description | Document Owner | | Document Approver | | |
|---|---|---|---|---|---|---|
| | | Position | Approval | Position | Approval | Approval Date |
| 14 | Amended Version | Programs & Systems Business Partner | Refer to supporting Info in Rex | Manager Health, Safety & Quality | Refer to supporting Info in Rex | 23/07/2024 |

# Contents

# 1. Purpose

The purpose of this Procedure is to define systems and processes to effectively manage any risk exposure to staff, contractors and visitors engaged in the use, storage and handling of hazardous chemicals at Seqwater workplaces along with risks to the receiving environment.

# 2. Scope

This Procedure applies to all employees, contractors and consultants working for or on behalf of Seqwater, unless otherwise stated.

# 3. Critical Controls for Hazardous Substances

The critical controls for hazardous substances focuses on substances that have the potential in a fatality in the business.

| Critical Controls for Hazardous Substances | | |
|---|---|---|
| **Critical Controls** | | **Objective** |
| 1 | Automatic shutdown of Chlorine Gas, Ozone Gas and Ammonia systems | To prevent large scale leaks of Chlorine Gas, Ozone Gas or Ammonia vapour |
| 2 | Fit for purpose Respiratory Protective Equipment. | To prevent inhalation exposure to hazardous substances |
| 3 | Emergency Services Assistance. | To mitigate the impact on human life of exposure to a hazardous substance |

# 4. Procedure

## 4.1. What are hazardous chemicals?

Hazardous chemicals include substances, mixtures or articles used in the workplace that can be classified according to their chemical hazards.

A chemical hazard is a set of inherent properties of the substance, mixture or article that may cause adverse effects to organisms or the environment. There are two broad types of hazards associated with chemicals that may present an immediate or long–term injury or illness to people. These are:

- **Health hazards** – These are properties of a chemical that have the potential to cause adverse health effects. Exposure usually occurs through inhalation; skin contact or ingestion. Adverse health effects can be acute (short term) or chronic (long term). Typical acute health effects include headaches, nausea or vomiting and skin corrosion, while chronic health effects include asthma, dermatitis, nerve damage or cancer.

- **Physicochemical hazards** – These are physical or chemical properties of the substance, mixture or article that pose risks to workers other than health risks, as they do not occur as a consequence of the biological interaction of the chemical with people. They arise through inappropriate handling or use and can often result in injury to people and/or damage to property as a result of the intrinsic physical hazard. Examples of physicochemical hazards include flammable, corrosive, explosive, chemically reactive and oxidising chemicals.

Many chemicals have both health and physicochemical hazards.

## 4.2. Hazardous chemical management

The following process must be implemented to manage hazardous chemicals at Seqwater workplaces:

- Step 1 – Identify the hazards – find out what could cause harm.
- Step 2 – Assess risks – how serious the consequence could be and the likelihood of it happening.
- Step 3 – Control the risk – implement the most effective control measure that is reasonably practicable with consideration given to the hierarchy of control to ensure residual is at an acceptable level.
- Step 4 – Review and maintain control Measures – make sure the controls are working as planned.

Any risk assessments of hazardous chemicals must be undertaken in accordance with the Hazard Identification and Risk Management Procedure (PRO-00657).

## 4.3. Step 1 – Identification of hazardous chemicals in the workplace

The first step in managing risks associated with hazardous chemicals involves assessing all substances, mixtures or articles that are used, handled, stored or generated at Seqwater workplaces to confirm if they contain hazardous chemicals.

The identity of hazardous chemicals in the workplace can usually be determined by reviewing the label and the SDS for the product and assessing if any of the ingredients are hazardous.

An assessment of processes that generate hazardous chemicals in the workplace (e.g., welding and the generation of welding fumes) must also be undertaken to assess the risks to the heath of workers exposed to the process.

The hazardous chemical identification process must be undertaken in consultation with workers in accordance with the Communication, Consultation and Issue Management Procedure (PRO-00870).

All hazardous chemicals (excluding consumer products) that are handled, stored, used or generated at a Seqwater workplace must be recorded in a hazardous chemical register.

### 4.3.1. Consumer products

A consumer product is a product that is packed or repacked primarily for use by a household consumer or for use in an office. In addition, the product is packed in the way and quantity in which it is intended to be used by a household or office consumer.

In accordance with the *Work Health and Safety Regulation 2011* (Qld) an SDS does not need to be obtained for a consumer product if it is reasonably foreseeable that the chemical will be used at the workplace only:

- in quantities that are consistent with household use
- in a way that is consistent with household use and incidental to the nature of work carried out by a worker.

Follow the flow chart below to determine if a chemical product is a Consumer Product.

| | | | | | | |
|---|---|---|---|---|---|---|
| Is the chemical packed or repacked primarily for use as it would be used at home or in an office? | If Yes | Is the chemical going to be used in the same way at work as it is at home | If Yes | Is the quantity of the cheimcal the same as it is for use in the home? | If Yes | It is a Consumer Product |
| If No | | If No | | If No | | |
| **It is not classed as a Consumer Product** | | | | | | |

An example of a consumer product: a 750 ml toilet cleaning product used at a workplace. It meets all the criteria above.

Example of not a consumer product: a 20 litre herbicide spray that is above the quantity that is normally used by a household and the way it is applied is not consistent with household use.

If an SDS is not obtained for a consumer product, Seqwater must still make sure that sufficient information about the safe use, handling and storage of the hazardous chemical is readily accessible to a worker at the workplace, an emergency service worker, or anyone else who is likely to be exposed to the hazardous chemical. This requirement will be met by ensuring this information is contained in the labelling of the consumer product.

If an SDS is not required for a consumer product, the product also does not need to be included in a hazardous chemical register.

### 4.3.2. Hazardous chemical registers

A hazardous chemical register must be developed for each Seqwater workplace where hazardous chemicals are located. Hazardous chemical registers for Seqwater workplaces are stored within ChemAlert.

Hazardous chemical registers must include:

- a list of all hazardous chemicals handled, stored, used or generated at the workplace regardless of their sizes and quantities, excluding consumer products
- the unit and quantity of the hazardous chemical
- the current SDS for each hazardous chemical listed, excluding consumer products

ChemAlert generates a generic risk rating for each chemical listed in a hazardous chemical register. This generic risk rating is based on the properties of the chemical and its potential affects to health. The generic risk ratings are low (green), medium (amber) and high (red).

Hazardous chemical registers must be readily accessible to workers involved in handling, storing, using or generating hazardous chemicals and anyone who is likely to be affected by a hazardous chemical at the workplace. To provide easy access for workers, a hard copy of site stock inventory report must be printed out from ChemAlert and kept in the relevant site yellow folder where applicable.

Hazardous chemical registers must be updated:

- as new hazardous chemicals are introduced to the workplace
- when there are changes to the quantities of chemicals held
- when the use of a particular hazardous chemical is discontinued.

## 4.4. Step 2 – Risk assessment of the hazardous chemical

A risk assessment must be completed for the purchase, storage, handling, transport and use of all hazardous chemicals used or generated at a Seqwater workplace.

When undertaking a risk assessment, the following must be considered:

- the hazardous properties of the hazardous chemical, including both health and physicochemical hazards of the chemical
- any potential hazardous chemical or physical reaction between the hazardous chemical and another substance or mixture, including a substance that may be generated by the reaction
- the nature of the work to be carried out with the hazardous chemical
- any structure, plant, work environment or system of work:
    - that is used in the use, handling, generation, or storage of the hazardous chemical
    - that could interact with the hazardous chemical at the workplace
- the workers and visitors at the workplace, including those who are directly or indirectly involved in using, handling, storing or generating a hazardous chemical
- the impact to the health and safety of other persons in the vicinity of chemical storage and handling e.g., persons who live in a neighbouring property to a WTP
- the potential impact to the environment, including air, land, and waters
- the route or extent of exposure and how often this exposure can occur
- any potential emergencies e.g., spills / leaks, fire or explosion etc.
- any control measures that are currently in place and their effectiveness.

### 4.4.1. Types of hazardous chemical risk assessments

The following types of risk assessments of hazardous chemicals are undertaken at Seqwater workplaces:

| Types of risk assessment | Description of risk assessment | Format | Assessed by |
|---|---|---|---|
| Basic risk assessment | The risks associated with hazardous chemicals, or groups of chemicals with similar properties and applications, which are handled, stored, used or generated at a Seqwater workplace must be captured on the workplace's risk register. | Facility Risk Register | Planning Engineering |
| | A SWMS must be developed and used for the transporting, handling or any other work undertaken with hazardous chemicals, or groups of chemicals with similar properties and applications. | SWMS Template (TEM-00013) Generic SWMS (RSK-00481) | Workers and supervisors with support from HSW Team where required. |
| Generic risk assessment | The following must have a Hazardous Chemical Risk assessment completed:<br>• all bulk storage hazardous chemicals that have a ChemAlert risk rating of medium (amber) or high (red)<br>• all other hazardous chemicals that have a ChemAlert risk rating of high (red). | Hazardous Chemical Risk Assessment Form (FRM-00611) | HSW Team |
| Detailed risk assessment | A detailed assessment undertaken by a subject matter expert e.g., chemical engineer or hygienist for any chemicals where there is a significant risk to health, such as chemicals that are known carcinogens, mutagens, reproductive toxicants or sensitisation agents. | External report | HSW Team |

All the risk assessment must be conducted in consultation with workers and supervisors who are directly or indirectly involved in using, handling, storing, or generating a hazardous chemical. All completed risk assessments must be saved in REX.

## 4.5. Step 3 – Hazardous chemical risk controls

Control measures must be identified and implemented to prevent exposure to hazardous chemicals. If the prevention of exposure is not practicable, the risk must be controlled to minimise any danger to workers.

The *Work Health and Safety Regulation 2011* (Qld) requires the hierarchy of controls to be utilised to choose measures that most effectively eliminate or minimise the risk. In order to adequately control the risk, a combination of controls may be required.

| Order of Preference | Action |
|---|---|
| Elimination | The most effective method of risk control is eliminating the hazard. Not using a hazardous chemical or eliminating exposure can achieve this. |
| Substitution | Substitution is the replacement of a hazardous chemical with a chemical that is less hazardous and presents lower risks. |
| Isolation | Isolation involves separating people from the chemicals or hazards by distance or barriers to prevent or minimise exposure. |
| Engineering controls | Engineering controls are physical in nature, including a mechanical device or process that eliminates or minimises the generation of chemicals, suppresses or contains chemicals, or limits the area of contamination in the event of spills and leaks. |
| Administrative controls | Administrative controls include systems of work or safe work practices that help to minimise worker's exposure to hazardous chemicals and other potential hazards generated by their use. |
| Personal protective equipment | Personal protective equipment (PPE) includes overalls, aprons, footwear, gloves, chemical resistant glasses, face shields and respirators.<br>Refer to the PPE Procedure (PRO-00881) for further information. |

### 4.5.1. Specific hazardous chemical risk control measures

In accordance with the *Managing Hazardous Chemicals in the Workplace Code of Practice 2013* (Qld), the following specific risk control measures must be implemented to manage risks associated with hazardous chemicals:

- fire and explosion protection
- keeping hazardous chemicals stable
- impact protection – containers, structures, and plant
- containing spills
- safe transfer of hazardous chemicals – systems and practice
- controlling risks from compressed gases
- regular inspections of control measures
- controlling asphyxiation hazards.

### 4.5.2. Seqwater drinking water treatment chemical safety requirement

A list of drinking water treatment chemicals (DWTC) currently being used at Seqwater and reference to the completed hazardous chemical risk assessment is outlined in Appendix G of this Procedure. Specific safety requirements for DWTC are outlined in GDE-00361 Drinking Water Treatment Chemical Guideline.

Any proposed new DTWC installations and all existing assets undergoing refurbishment or expansion must comply with the relevant Seqwater engineering standards.

## 4.6. Step 4 – Maintaining hazardous chemical risk control measures

Maintenance of hazardous chemical risk control measures involves:

- supervision to check that workers are using the control measures properly
- preventative maintenance and testing programs for chemical storage and handling systems
- periodic air monitoring to check that engineering and administrative controls remain effective.

## 4.7. Step 5 – Reviewing hazardous chemical risk control measures

Hazardous chemical risk controls must be reviewed (and if necessary revised):

- when the control measure is not effective in controlling the risk i.e., an incident occurs
- before a change at the workplace that is likely to give rise to a new or different health, safety and/or environmental risk that the control measure may not effectively control
- if a new hazard or risk is identified
- if the results of consultation indicate that a review is necessary
- if a Health and Safety Representative (HSR) requests a review
- if the SDS of hazardous chemicals is changed
- if a health monitoring report for a worker identifies adverse health effects
- if atmospheric monitoring indicates that the airborne concentration of a hazardous chemical at the workplace exceeds the relevant exposure standard.

## 4.8. Purchasing hazardous chemicals

The purchase of hazardous chemicals must be undertaken in accordance with the Seqwater Procurement Procedure (PRO-01514).

### 4.8.1. Drinking Water Treatment Chemicals

To order or receive a DWTC for an operational site, the relevant work instruction or procedure for receiving the chemical must be followed.

### 4.8.2. Hazardous chemicals stocked by stores

The Seqwater Regional Stores purchase and maintain a stock of chemicals that have been permitted or approved by relevant subject matter of experts in Seqwater e.g., Regional HSW Partner, Regional Environmental Advisor/Coordinator, Water Quality specialist, Laboratory Specialist and/or Biosecurity Officer etc.

A list of stock chemicals that can be directly ordered from the Regional Stores can be found from the Stores Inventory in ChemAlert. .

### 4.8.3. Hazardous chemicals NOT stocked by stores BUT currently listed in the workplace hazardous chemical register

The following steps must be followed to purchase a hazardous chemical that is not stocked by stores but is listed in the current hazardous chemical register:

- Check the hazardous chemical register (the hard copy registers or ChemAlert) to confirm it is listed in the chemical register.
- Check if the SDS is still valid. If not, request a valid SDS from the chemical supplier prior to the purchase.

- If a hazardous chemical has a high (red) risk rating in ChemAlert check if a hazardous chemical risk assessment has been completed and is still valid.
- Check HACCP to confirm that the chemical is approved for use at the site
- Complete the Checklist for Purchasing and Receiving Hazardous Chemicals (FRM-00025).
- Raise a purchase order or contractor order in accordance with the Seqwater Procurement Procedure (PRO-01514).
- Finalise the Checklist for Purchasing and Receiving Hazardous (FRM-00025) once the chemical is received.

The above requirements do not apply to the purchase of chemicals for Seqwater laboratories. However, the relevant supervisor must ensure the correct product and quantity is purchased and risks associated with the purchase are managed.

Where required, a manager or line supervisor may request a regularly purchased hazardous chemical to be added to the stores' inventory.

### 4.8.4. Hazardous chemicals NOT previously used by Seqwater

To obtain approval to purchase a hazardous chemical that has not been used by Seqwater and has not had a risk assessment approved, the follow steps must be followed:

- Identify the preferred chemical for the work, including its manufacturers or suppliers.
- Search the chemical in ChemAlert to confirm its risk rating.
- If it has a low (green) risk rating according to ChemAlert, the chemical can be purchased directly without any approval.
- If a DWTC has a high (red) or medium (amber) or any other hazardous chemical has a high (red) risk rating according to ChemAlert, a product request must be sent to relevant subject matter experts in Seqwater for review and approval e.g., HSW Partner, Regional Environmental Advisor/Coordinator, Water Quality specialist, Laboratory specialist and/or Biosecurity Officer etc.
- The nominated subject matter expert will review the SDS of the chemical, assess the risks associated with chemical and advise if they:
    - approve the purchase of the chemical
    - recommend alternative lower risk products for the work
    - do not approve the purchase of the chemical.
- Once required approvals have been obtained, the Checklist for Purchasing Hazardous Chemicals (FRM-00025) must be used to manage the purchase of the hazardous chemical. The use of the checklist is intended to assist in ensuring that the correct product and quantity is purchased, and risks associated with the purchase are controlled.

Where there are multiple chemicals available the least hazardous chemical must be purchased, provided other considerations (i.e., availability, cost, environmental impact, etc.) do not impact on the intended purpose of the chemical.

## 4.9. Hazardous chemical storage and handling

Hazardous chemicals must be stored and handled in accordance with the requirements of the SDS and the hazardous chemical risk assessment. When identifying how to store and handle a hazardous chemical, the following must be considered:

- Hazardous chemicals that are not compatible with other substances, goods or liquids must be stored separately. Please refer to the WHSQ Segregation Tool for Dangerous Goods to confirm specific storage requirements:
- Flammable or combustible chemicals must only be purchased and stored at the lowest practicable quantity. Storage must comply with *AS 1940: The storage and handling of flammable and combustible liquids*.
- Ignition sources must not be introduced into a hazardous chemical storage area if there is a possibility of fire or explosion.
- Corrosive chemicals (dangerous goods class 8) must be stored in compliance with *AS 3780: The storage and handling of corrosive substances*.
- Correct signage and placarding are clearly displayed where hazardous chemicals are stored.
- Storage systems and storage containers used for hazardous chemicals must only be used for the storage of hazardous chemicals.
- Storage and handling systems must only be used for their intended purpose and must be operated, tested, maintained, installed, repaired and decommissioned with regard to the health and safety of workers and others.
- Hazardous chemicals must be stored and handled in a manner that makes sure that the chemical does not become unstable, decompose or change to create new hazards or increase the risks associated with the chemical.
- Spill containment systems must be appropriate for the type and volume of chemical being stored or handled. Any hazardous chemical including fuel, in a container that is greater than 15L, on a site managed under an Environmental Authority (EA) must be within a secondary containment system e.g., in a bunded cabinet or in a tray. For a list of Seqwater sites that are managed under an EA, please refer to the following documents:
  - D15/10256: 20180322 - Northern Region Environmental Authority EPPR00511713
  - D15/10250: 20230330 - Central Region - Environmental Authority EPPR00640413
  - D15/10244: 20160315 - Southern Region - Environmental Authority EPPR00881713
- Appropriate spill kits must be provided and maintained where spills and leaks are reasonably foreseeable.
- A safety shower and eye wash station must be installed in accordance with the *AS 4775: Emergency eyewash and shower equipment* where required by the Seqwater engineering standards or recommended by a risk assessment.
- Containers in which bulk quantities of hazardous chemicals are stored and any associated pipe work or attachments:
  - must have stable foundations and supports
  - must be secured to the foundations and supports to prevent any movement between the container and the associated pipe work or attachments
  - must be free of damage.

### 4.9.1. Safety data sheets

Any Seqwater worker who purchases hazardous chemicals must obtain the current safety data sheet (SDS) from the manufacturer, importer or supplier of the chemical either before it is first supplied, or as soon as practicable after supplied (but before use).

A SDS is not required for any consumer product. Refer to section 4.3.1 of this Procedure for the detailed requirement and how to define a consumer product.

At Seqwater, workers can access to an SDS through a combination of the following methods:

- hard copy of SDS
- electronic version of a SDS via computer and mobile devices.

A hard copy of SDS must be provided and kept in the vicinity of where the chemical is stored and handled for the following chemicals:

- Drinking Water treatment chemicals,
- Any high-risk rating (Red) chemicals,
- Chemicals are stored at any site where there is no stable network coverage.

For all other chemicals they can be accessed electronically via computer and mobile device. However, it does not restrict a worker who prefers the use of a hard copy SDS at any time. The worker must ensure the hard copy SDS they use is current and produced by the correct manufacturer.

The table below provides some examples on how SDSs can be accessed.

| Type of workplaces | Example | How SDSs are accessed | Comments |
|---|---|---|---|
| Water Treatment Plant | Molendinar WTP | Seqwater operators and maintenance workers can access all the SDSs for the hazardous chemicals stored on this site via computer, laptop and mobile devices.<br>A hard copy of SDS from the relevant manufacturer is placed in each of drinking water treatment chemical storge area (this can be used by the contractors, visitors, Emergency Services),<br>If they have any high-risk rating (Red) chemical used in the Operations Lab, hard copy of SDSs for these chemicals are kept in the lab. | An operator may print out a SDS for the easy reading during a work planning or SWMS developing. |
| Dam and Catchment | North Pine Dam and Rangers Hut | Seqwater operators / rangers can access all the SDSs for the hazardous chemicals stored on this site via computer, laptop and mobile devices.<br>If they have any high-risk rating (Red) chemical stored onsite, hard copy of SDSs for these chemicals are kept. | An operator / ranger must download the SDSs on their laptop and/or mobile devices or print out the SDSs prior to heading to an area with poor access to network. |
| Maintenance Workshop | West Bank Mechanical Workshop | Seqwater maintenance workers can access all the SDSs for the hazardous chemicals stored on this site via computer, laptop and mobile devices. | A maintenance worker may print out a SDS for the easy reading prior to heading to an |

| Type of workplaces | Example | How SDSs are accessed | Comments |
|---|---|---|---|
| | | If they have any high-risk rating (Red) chemical stored onsite, hard copy of SDSs for these chemicals are kept. | area with poor access to network. |
| A chemical storage area with no stable network coverage | Jimna WTP<br>East Bank PS | A hard copy of SDS is made available at the site as it is a pre-defined site with no stable network coverage.<br>Seqwater personnel can download the SDSs on their laptop and/or mobile devices prior to travelling to this site, then they can access the downloaded SDSs via their laptop and mobile devices. | |
| Process labs | Lander Shute Process lab | Seqwater laboratory staff members can access all the SDSs for the hazardous chemicals stored on this site via computer, laptop and mobile devices.<br>If they have any high-risk rating (Red) chemical stored onsite, hard copy of SDSs for these chemicals are kept. | They may maintain hard copy of SDSs in an Ops lab where there is no network coverage. |
| Stores | | They can access the SDSs via computer, laptop and mobile devices | |
| Office | ICON Office | Most hazardous chemicals used onsite can be classified as consumer product. Access to a SDS is not required. | Contractors e.g., cleaners who carry and use their own chemicals must ensure they have access to these SDS if required. |

Workers are not permitted to amend or otherwise make changes to an SDS.

An SDS remains current for a maximum period of five years from the date of issue of the SDS, unless modified prior to this date by the manufacturer.

SDS must be regularly inspected for currency by the HSW Team, line supervisors and any workers who use the chemical.

SDS do not need to be obtained or stored for consumer products.

### 4.9.2. Safety equipment

Any Seqwater worker required to handle and use a hazardous chemical must be provided with safety equipment as required by the relevant SDS and associated risk assessment. Hazardous chemical safety equipment must be maintained in accordance with the Safe Work with Plant Procedure (PRO-00867).

### 4.9.3. Safety signs

Hazardous chemical warning signs must be installed so that workers are aware of the presence and location of hazardous chemicals in the workplace.

Hazardous chemical signage must:

- warn of a particular hazard associated with the hazardous chemicals
- state the responsibilities of a particular person in relation to the hazardous chemicals
- be located next to the hazard
- be clearly visible to a person approaching the hazard.

All hazardous chemical signs must comply with *AS 1319: Safety signs for the occupational environment*.

Hazardous chemical signs must be inspected and maintained so that they are adequately warning workers of the presence of hazardous chemicals.

### 4.9.4. Labelling

Hazardous chemicals must be correctly labelled in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals. Labelling must also comply with Schedule 9 Part 3 of the *Work Health and Safety Regulation 2011* (Qld).

When decanting hazardous chemicals into a smaller container, a label must be affixed to the container to identify the contents. ChemAlert labels are to be used and can be obtained from ChemAlert or by request from the HSW team. An example of a hazardous chemical label is included as Appendix B of this Procedure.

Containers with a hazardous chemical label are to be used only for the use, handing or storage of the hazardous chemical detailed on the label.

If an unlabeled container is found, the container must be stored away from other substances or goods. The Seqwater Regulated and Trackable Waste Management Procedure (PRO-01496) must be followed to dispose of the container and substance within the container.

### 4.9.5. Decanting hazardous chemicals

Where possible, chemicals should be kept in their original container with the original labelling from the manufacturer/supplier.

Where chemicals must be decanted, the method defined in the relevant SDS, and hazardous chemical risk assessment or documented risk assessment must be followed. New containers must be appropriate for the chemical they will hold and must be correctly labelled.

Hazardous chemicals **MUST NOT** be decanted into food or drink containers.

Specific control measures must be identified and implemented when decanting chemicals in explosive atmospheres or chemicals that may produce explosive atmospheres (e.g., earthing equipment, non-synthetic protective garments).

Appropriate spill containment e.g., decanting within bunds, or over temporary decanting bunding shall be considered and used to prevent any spills from discharged into the environment.

## 4.10. Transporting hazardous chemicals

Under no circumstance should Seqwater workers transport dangerous goods on Queensland Main Roads if any of the following conditions are met:

1. The dangerous goods are in a receptacle with a capacity of more than 500 liters or more than 500 kilograms.
2. The total quantity of each type of dangerous good in the load exceeds the placard load limits for that type of dangerous good.
3. The aggregate quantity of dangerous goods in the load exceeds 25% of the placard load limit for any type of dangerous good, when multiple types of dangerous goods are transported in one load.

Placard load limits for dangerous goods that are normally stored and used at Seqwater are outlined in Appendix C of this Procedure.

The transportation of dangerous goods over these limits must only be performed in accordance with *Transport Operations (Road Use Management—Dangerous Goods) Regulation 2018* (Qld) and the *Australian Code for the Transport of Dangerous goods by Road and Rail (ADG Code)*.

Where small quantities of hazardous chemicals (i.e., <50 litres) are transported at Seqwater workplaces, the worker who performs the tasks must check that:

- the chemicals are in appropriate containers with correct labels
- the chemical containers are secured to prevent rotating, crashing or falling off the vehicle
- extreme heat to the chemicals is mitigated
- an appropriate form of bunding to contain any leaks in vehicles, e.g., a tray or container, is considered when carrying chemicals in vehicles
- when transporting gas cylinders in a vehicle, the cylinder must be kept in upright position and secured, with an appropriate cap on.
- appropriate personal protective equipment (PPE), spill kits, manual handling risks and first aid kits are available.

### 4.10.1. Pipe Work used to transfer hazardous chemicals

All pipe work used for transferring hazardous chemicals must be appropriately designed and manufactured.

All pipe work used for transferring hazardous chemicals must be labelled in accordance with *AS1345: Identification of the contents of pipes, conduits and ducts*. The systems for pipe work content identification comprise the following:

- base identification - which is a single colour and which may cover all or part of the pipe as set out in AS1345 (e.g., pipe base colour for flammable and combustible liquid is brown, flammable and combustible liquid gas is yellow, acid and alkali is violet)
- pipe marker - which comprises one or more words on a label identifying either the contents or the hazardous nature of the contents, or both.
- supplementary identifications - which comprise a band or panel of a different colour used to indicate an additional attribute of the contents of the pipe.

## 4.11. Mixing, handling and using hazardous chemicals

When mixing, handling and using hazardous chemicals, the requirements defined in the SDS and identified through the hazardous chemical risk assessment, or a SWMS must be implemented.

Prior to commencing the task that involves mixing, handling and using hazardous chemicals, the relevant safety equipment, i.e., ventilation and safety shower, must be checked.

A copy of the SDS is to be kept as close as possible to the hazardous chemicals being mixed, handled and used to allow the worker to refer to it easily.

PPE must be used in accordance with the SDS and the relevant risk assessment. Additional risk control measures such as mechanical ventilation, isolations or gas monitoring may be implemented and maintained as required.

All reasonably practicable methods must be implemented so that hazardous chemicals do not contaminate the water supply, food, food packaging or personal use products.

### 4.11.1. Spraying of specific hazardous chemicals

At least one worker on a spray team must hold an Agricultural Chemical Distribution Control (ACDC) License before any of the spray team can commence spraying. All workers on a spray team must be trained in spraying operations. Health monitoring may be required in accordance with the Health Monitoring & Immunisations Procedure (PRO-00020).

### 4.11.2. Construction Work

A Safe Work Method Statement (SWMS) must be prepared if hazardous chemicals are used at a construction workplace. Any contractor using hazardous chemicals at a Seqwater construction site must ensure that the risk associated with hazardous chemicals is considered in the contractor's safety and environmental management plans relevant to the construction work.

## 4.12. Review and disposal of hazardous chemicals

An annual chemical survey/inspection must be conducted at all Seqwater workplaces to identify chemicals that are out of date or no longer used and can be disposed of. The annual survey / inspection of chemicals at Seqwater workplaces will be facilitated by the HSW Team.

The relevant SDS for each hazardous chemical identified for disposal must be reviewed to establish the appropriate method of disposal. In addition, the Seqwater Water Quality and Environment, Heritage and Land Use Planning (EHLUP) team must be consulted to confirm if the disposal activity triggers any reporting requirements in relation to trackable waste management.

Where required, a competent service provider may be engaged to dispose of hazardous chemicals. Where the hazardous chemicals are a regulated waste, they must be transported by a licensed regulated waste transporter to a licensed waste facility for the specific waste (as per the Regulated and Trackable Waste Procedure PRO-01496)

Where a hazardous chemical is removed from a site, the hazardous chemical register must be amended.

Containers of hazardous chemicals must not be washed out in areas where there is a possibility of waste solution entering a storm water drain, natural watercourse or contamination of the environment.

### 4.12.1. Decommissioning of hazardous chemical storage and handling systems

Hazardous chemical storage and dosing systems must be free of hazardous chemicals when the system is decommissioned. If it is not reasonably practicable to remove the hazardous chemicals from the system, it must be correctly labelled.

Where an underground handling or storage system is no longer required or is to be disposed of, so far as reasonably practicable, the system must be removed. If removal of the underground system is not reasonably practicable, the system must be made safe so that it poses no risks to health, safety or the environment.

Workplace Health and Safety Queensland (WHSQ) must be notified of the abandonment of an underground storage system used to store flammable gases or flammable liquids as soon as practicable after the storage system is abandoned. It is the responsibility of the responsible project manager to make sure this notification is made.

## 4.13. Health monitoring

Health monitoring of a person means monitoring the person to identify changes in the person's health status because of exposure to certain substances. Health monitoring involves the collection of data in order to evaluate the effects of exposure and to confirm that the absorbed dose is within safe levels.

Health monitoring allows Seqwater to make decisions about ways to eliminate or minimise a worker's risk of exposure, for example, by reassigning a worker to other duties that involve less exposure or improving control measures associated with the activities being undertaken.

Workers must be provided with information relating to the requirements for health monitoring where they are at risk of exposure to hazardous substances.

Health monitoring is not an alternative to implementing risk control measures. If health monitoring results indicate that a worker is experiencing adverse health effects or signs of exposure to a hazardous chemical, the risk control measure must be reviewed and if necessary revised.

The Seqwater Health and Wellbeing Specialist must arrange for health monitoring if a worker is regularly handling, storing or using hazardous chemicals, or there is a significant exposure risk determined by a risk assessment. For details refer to the Health Monitoring and Immunisations Procedure (PRO-00020).

## 4.14. Hazardous chemical manifests

### 4.14.1. Classification of hazardous chemicals

Under the *Work Health and Safety Regulation 2011* (Qld), a hazardous chemical is any substance, mixture or article that satisfies the criteria for one or more Globally Harmonised System of Classification and Labelling of Chemicals (GHS) hazard classes, including a classification scheme in Schedule 6 of the *Work Health and Safety Regulation 2011* (Qld).

### 4.14.2. Manifest requirements

A hazardous chemical manifest must be developed where the quantities of hazardous chemicals stored at a Seqwater workplace exceed quantities identified in Schedule 11 – Placard and manifest quantities of the *Work Health and Safety Regulation 2011* (Qld). Threshold quantities for hazardous chemicals stored at Seqwater

workplaces are defined in Appendix D of this Procedure. A list of Seqwater workplaces that are classified as manifest quantity workplace (MQW) is provided in Appendix E of this Procedure.

The hazardous chemical manifest must comply with the requirements of Schedule 12 – Manifest requirements of the *Work Health and Safety Regulation 2011* (Qld).

Manifests must be reviewed and updated:

- as soon as practicable after any change to the amount or types of hazardous chemicals being used, stored, handled or generated at the workplace
- every two years.

The hazardous chemical manifest must be kept in a locked red weatherproof container as close as practicable to the main entrance of all Seqwater workplaces that store manifest quantities of hazardous chemicals. The location of the hazardous chemical manifest container must be agreed with QFES, and the container must be adequately signed for easy location and identification.

A copy of all hazardous chemical manifests must be stored in REX.

## 4.14.3. Notifications to Workplace Health and Safety Queensland (WHSQ)

### Placard and manifest quantities

The HSW Team must notify WHSQ:

- immediately when a hazardous chemical or group of hazardous chemicals identified in Schedule 11 – Placard and manifest quantities of the *Work Health and Safety Regulation 2011* (Qld) is first used, handled or stored at a Seqwater workplace
- when there will be a significant change in the risk of using, handling, or storing of the hazardous chemicals, or at least 14 days before their first use (whichever is earlier)
- as soon as practicable after the hazardous chemical is no longer used, handled or stored at a Seqwater workplace, and it is not likely to be used, handled or stored there in the future.

### Major hazard facility

The HSW Team must notify WHSQ of any workplaces where chemicals identified in Schedule 15 – Hazardous chemicals at major hazard facilities (and their threshold quantities) of the *Work Health and Safety Regulation 2011 (Qld)* are present or likely to be present in a quantity that exceeds 10% of their threshold quantity.

Should a site be determined as a Major Hazard Facility by WHSQ, Seqwater must comply with the requirements of Chapter 9 – Major hazard facility of the *Work Health and Safety Regulation 2011* (Qld).

## 4.14.4. Placards

The WHS Team, in consultation with workers, are to identify all placard quantity locations where the total quantity of a hazardous chemical or group of hazardous chemicals identified in Schedule 11 – Placard and manifest quantities of the *Work Health and Safety Regulation 2011* (Qld) is used, handled or stored at the workplace exceeds the placard quantity. Information relating to the classification of a placard quantity location is included in Appendix D of this Procedure.

An outer warning placard and information placard must be prominently displayed and properly maintained where a placard quantity of hazardous chemicals is used, handled or stored. The placard must comply with Schedule 13 – Placard requirements of the *Work Health and Safety Regulation 2011 (Qld)*.

An example of a placard is included in Appendix E of this Procedure.

## 4.15. Emergency preparedness

A site Incident and Emergency Response Plan (IERP) must be developed for all workplaces, including each manifest quantity exceeded workplace, in accordance with the Emergency Preparedness and Response Procedure (ERP-00079). IERPs must include details around how to respond to any emergencies involving hazardous chemicals.

### 4.15.1. Fire protection and firefighting equipment

Seqwater workplaces where hazardous chemicals are used, handled, generated or stored must have:

- fire protection and firefighting equipment that is designed and built for the types of hazardous chemicals used, handled, generated or stored at the site
- fire protection and firefighting equipment that is readily accessible at the workplace
- fire protection and firefighting equipment that is compatible with firefighting equipment used by Queensland Fire and Emergency Services (QFES)
- firefighting equipment that is properly installed, tested and maintained
- dated records kept for the results of fire protection and firefighting equipment testing.

## 4.16. Chemicals with security concerns

High-risk chemicals with security concerns must be identified in the workplace, for example explosives or toxic substances that may be used by unauthorised people to cause an security incident,. Appropriate security measures should be implemented to prevent unauthorized access or malicious use, ensuring public safety and preventing harm. A minimum of control measure requirement for any new asset and existing asset undergoing refurbishment or modification is outlined in Seqwater's Baseline Security Measures Standard (SPE-00442).

Below is a list of chemicals with high-risk security concerns currently used and stored at Seqwater:

- Chlorine gas (nominated WTPs)
- Hydrogen peroxide (Process Labs)
- Nitric Acid (Process Labs)
- Sodium Cyanide as an ingredient of Alkaline Cyanide (Process and Operations Labs)

# 5. Training requirements

The below table should be referenced for workers who may be potentially exposed to hazardous chemicals in the workplace so as to provide appropriate information, supervision, instruction and training.

| Requirement | Description | Refresher Timeframe | Target Audience |
|---|---|---|---|
| Chlorine Gas for Maintainers | This requirement is related to AS 2927 – 2019 and provides information on the following:<br>• Awareness of chlorine and its properties<br>• Australian Standards requirements<br>• Hazards of liquefied chlorine gas handling<br>• Handling, transport and storage of liquefied chlorine gas containers<br>• Emergency response, equipment and planning<br>• Health effects of liquefied chlorine gas<br>• First aid procedures<br>• Hazard signage | 3 years | This course is designed for those who work next to chlorine facilities, but do not operate the chlorine process.<br>Personnel involved with maintaining chlorine equipment and includes recognising when maintenance is required and understanding the relevant content of AS 2927. |
| Operations Competency - Chlorine Gas Operator | This requirement is related to AS 2927 – 2019 and is a nationally recognised unit of competency from the Water Training Package. | 3 years | For worker who undertake chlorine gas change over and operate the chlorine system |
| Chlorine Gas Awareness for Non-Operational Workers | This module details the hazards, risks and emergency procedures relating to chlorine gas at operational sites | 3 years | For non-operational personnel who work at a site where Chlorine Gas is present. |
| Operations Competency – Fluoride Operator (NWPTRT012) | This is a legislative requirement that covers the skills and knowledge required to monitor and operate fluoride addition processes in water treatment plants and is a nationally recognised unit of competency in the National Water Training Package | N/A | Water Treatment Operator roles responsible for fluoridation processes in water treatment plants. |

| Requirement | Description | Refresher Timeframe | Target Audience |
|---|---|---|---|
| Fluoride awareness | Web based training that provides awareness of hazards and controls in relation to Fluoride at Seqwater | Nil | For any workers and visitors who need to undertake work in the fluoride building and are not required to complete the Operations Competency – Fluoride Operator. |
| Hazardous Chemical Awareness | Web-based training provides awareness of hazards and controls in relation to hazardous chemicals and how to access a SDS in ChemAlert. | Nil | Any workers that work with or interact with hazardous chemicals in the workplace. |
| Agriculture Chemical Distribution Licence (ACDC) | This course will teach you the theoretical and practical components to meet the skills and knowledge required to be able to apply to hold an unrestricted commercial operator's licence for using herbicides | 3 years | Any person who supervisors or operates ground equipment from which herbicides are distributed. |

# 6. Definitions

| Term | Definitions |
|---|---|
| ADG Code | Australian Code for the Transport of Dangerous goods by Road and Rail. |
| Aggregate quantity | In relation to a load containing dangerous goods, means the total of:<br>a. the number of kilograms of the following in the load—<br>(i) solid dangerous goods;<br>(ii) articles, including aerosols; and<br>b. the number of litres or kilograms, being whichever is used to describe the goods in the transport documentation for the transport of the goods, of liquid dangerous goods in the load; and<br>c. the total capacity in litres of receptacles in the load containing dangerous goods of UN class 2 other than aerosols |
| Bulk Chemical | In relation to a hazardous chemical, bulk means any quantity of a hazardous chemical that is:<br>• in a container with a capacity exceeding 500L or net mass of more than 500kg; or<br>if the hazardous chemical is a solid - an undivided quantity exceeding 500kg. |
| Consumer product | A product that is packed or repacked primarily for use by a household consumer or for use in an office.<br>If the product is packed or repacked primarily for use by a household or office consumer it is packed in the way and quantity in which it is intended to be used by a household or office consumer. |
| Dangerous goods | Substances, mixtures or articles that, because of their physical, chemical (physicochemical) or acute toxicity properties, present an immediate hazard to people, property or the environment. |
| Dangerous incident | An incident in relation to a workplace that exposes a worker or any other person to a serious risk to a person's health or safety emanating from an immediate or imminent exposure to:<br>• an uncontrolled escape, spillage or leakage of a substance<br>• an uncontrolled implosion, explosion or fire<br>• an uncontrolled escape of gas or steam<br>• an uncontrolled escape of a pressurised substance<br>• electric shock<br>• the fall or release from a height of any plant, substance or thing<br>• the collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with the regulations<br>• the collapse or partial collapse of a structure |

| Term | Definitions |
|---|---|
| | • the collapse or failure of an excavation or of any shoring supporting an excavation<br>• the inrush of water, mud or gas in workings, in an underground excavation or tunnel<br>• the interruption of the main system of ventilation in an underground excavation or tunnel<br>• any other event prescribed under a regulation but does not include an incident of a prescribed kind. |
| Drinking Water Treatment Chemical (DWTC) | A chemical that is added to drinking water mainly to reduce or eliminate the incidence of water borne disease, for other public health measures, and to improve the aesthetic quality of the water. |
| Incident and Emergency Response Plan (IERP) | The written document of the emergency arrangements for a workplace or identified activity. It consists of the preparedness, prevention and response activities and includes the agreed emergency roles, responsibilities, strategies, systems and arrangements. Where possible, it will also include fire and evacuation plans for any buildings occupied by Seqwater and covered by an Emergency Response Plan. |
| Exposure | The contact between a person and a chemical. The chemical may be in the form of a gas, vapour, fume, liquid or solid. |
| Exposure standard | An acceptable exposure level of an airborne concentration for a particular substance in a workers' breathing zone, which should not cause adverse health effects.<br>Details of exposure standards are available in the *Workplace Exposure Standard for Airborne Contaminants*. |
| Hazardous chemicals | Means a substance, mixture or article that satisfies the criteria for a hazard class in the Globally Harmonised System (GHS) (including a classification mentioned in schedule 6 of the *Work Health and Safety Regulation 2011* (Qld)), but does not include a substance, mixture or article that satisfies the criteria solely for one of the following hazard classes:<br>(a) Acute toxicity – oral – category 5<br>(b) Acute toxicity – dermal – category 5<br>(c) Acute toxicity – inhalation – category 5<br>(d) Skin corrosion/irritation – category 3<br>(e) Serious eye damage/eye irritation – category 2B<br>(f) Aspiration hazard – category 2<br>(g) Flammable gas – category 2<br>(h) Acute hazard to the aquatic environment – category 1, 2 or 3<br>(i) Chronic hazard to the aquatic environment – category 1,<br>2, 3 or 4; or<br>(j) Hazardous to the ozone layer. |

| Term | Definitions |
|---|---|
| Health monitoring | Health monitoring systematically detects and assesses any adverse effects of work on the health status of workers as it relates to their duties. It is delivered through real time monitoring of exposure levels, medical assessment and biological monitoring of workers (e.g., blood/urine tests for checking chemical exposure). |
| Intermediate bulk container (IBC) | Means a rigid or flexible portable packaging for the transport of dangerous goods that complies with the requirements of chapter 6.5 of the ADG Code and that—<br>(a) has a capacity of not more than—<br>(i) for solids of Packing Group, I packed in a composite, fibreboard, flexible, wooden, or rigid plastics container 1500L; or<br>(ii) for solids of Packing Group, I packed in a metal container—3000L; or<br>(iii) for solids or liquids of Packing Groups II and III—3000L; and<br>(b) is designed for mechanical handling. |
| Major Hazard Facility | A workplace:<br>• at which chemicals identified in schedule 15 of the *Work Health and Safety Regulation 2011*(Qld) are present or likely to be present in a quantity that exceeds their threshold quantity that is determined by Workplace Health and Safety Queensland under part 9.2 of the *Work Health and Safety Regulation 2011*(Qld) to be a major hazard facility. |
| Manifest quantity exceeded workplace | Any workplace where the quantity of hazardous chemicals used, handled or stored exceeds the manifest quantity for that hazardous chemical. |
| Notifiable incident – WHS | An incident which involves:<br>• the death of a person; or<br>• a serious injury or illness of a person; or<br>• a dangerous incident. |
| Notifiable incident – Environmental | Notifiable incidents under the EP Act involve:<br>• a) breach of an EA condition, regardless of impact (e.g., small chemical spill to land or water), or<br>• b) causing potential or actual serious or material environmental harm (e.g., spending >$10,000 to remediate the environment to its original state – such as sucker trucker hire, etc). |
| Placard | A sign or notice:<br>• displayed or intended for display in a prominent place, or next to a container or storage area for hazardous chemicals at a workplace<br>that contains information about the hazardous chemical stored in the container or storage area. |
| Risk | Risk is the likelihood and consequence of injury or harm occurring when exposed to a hazard. |

| Term | Definitions |
|---|---|
| Risk control | Means taking action to eliminate health and safety risks so far as is reasonably practicable, and if that is not possible, minimising the risks so far as is reasonably practicable. Eliminating a hazard will also eliminate any risks associated with that hazard. |
| Reasonably practicable | The following criteria must be applied in determining what is reasonably practicable:<br>• The likelihood of the hazard or risk concerned occurring.<br>• The degree of harm that might result from the hazard or risk.<br>• What the person knows or ought to reasonably know about the hazard and ways of eliminating or minimising the hazard.<br>• Availability and suitability of ways of eliminating or minimising the hazard.<br>The cost associated with the availability and suitability of ways of eliminating or minimising the hazard, taking into account the cost if it is grossly disproportionate to the risk. |
| Safe Work Method Statement (SWMS) | A SWMS sets out steps to enable supervisors, workers and any other persons at the workplace to understand the requirements that have been established to carry out work in a safe and healthy manner. It sets out the work activities in a logical sequence and identifies hazards and describes control measures. |
| Safety data sheet (SDS) | A document that describes the identity, chemical and physical properties, health and environmental hazard information, uses, precautions for use, safe handling procedures and safe disposal procedures of a hazardous chemical. |
| Physicochemical hazards | Hazards that result from the physical or chemical properties of the substance, mixture or article, like flammable, corrosive, oxidizing or explosive substances. |
| Worker | Worker means a person who carries out work in any capacity for Seqwater, including work as:<br>• an employee<br>• a contractor or subcontractor<br>• an employee of a contractor or subcontractor<br>• an employee of a labour hire company who has been assigned to work at Seqwater<br>• an outworker<br>• an apprentice or trainee<br>• a student gaining work experience<br>• a volunteer<br>• a worker of a prescribed class. |
| Workplace | A place where work is carried out by Seqwater and includes any place where a worker goes, or is likely to be, while at work. This includes a vehicle, vessel or other mobile structure. |

# 7. Roles and Responsibilities

| Role | Responsibility |
|---|---|
| Commercial Services Team | • Provide support and advice on managing the risks of hazardous chemicals.<br>• Maintain the content in contracts that assists Seqwater to enforce the content of this document.<br>• Maintain communication with suppliers to ensure they comply with the content of this document |
| Engineering Standards and Assurance Team | • Maintain engineering technical standards that are relevant to hazardous chemicals and hazardous area applications. |
| Health Safety and Wellbeing (HSW) Team | • Provide support and advice on the management of the risks associated with hazardous chemicals.<br>• Facilitate the completion of hazardous chemical risk assessments.<br>• Identify the manifest quantity exceeded workplaces (MQWs) and notify Workplace Health and Safety Queensland (WHSQ) of these workplaces on the approved form, within the required timeframe.<br>• Provide support and advice in developing and testing site IERPs for the manifest quantity exceeded workplaces and provide a copy to Queensland Fire and Emergency Services (QFES).<br>• Facilitate health monitoring and air monitoring where required.<br>• Business owner of ChemAlert, a database that supports the management of hazardous chemicals. Business owner of ChemAlert, a database that supports the management of hazardous chemicals. |
| Line Supervisors | • Establish a process within their team so that risks associated with purchasing, using, mixing, handling and storage of hazardous chemicals are identified, assessed, controlled and evaluated.<br>• Facilitate the provision of training, instruction and supervision to workers who purchase, handle or store hazardous chemicals.<br>• Establish a process within their team to maintain and review hazardous chemical registers using ChemAlert.<br>• Ensure, so far as is reasonably practicable, that Safety Data Sheets (SDS), labelling, placarding and manifest requirements are implemented and maintained. |
| Managers | • Ensure, so far as is reasonably practicable, the implementation of the requirements of this Procedure within their area of responsibility.<br>• Facilitate the development, testing and review of site Incident and Emergency Response Plans (IERPS) for workplaces they are responsible for. |
| Operational Support and Improvement Team | • Provide support and advice on managing the risks of hazardous chemicals.<br>• Provide advice on the triggers for and monitor compliance with Environmental Relevant Activity (ERA) approval requirements (where required). |

| Role | Responsibility |
|---|---|
| Project Manager | • Make sure that any contractor using hazardous chemicals at a Seqwater site has a relevant and appropriate Safe Work Method Statement (SWMS) and that the risks associated with hazardous chemicals is covered in the contractor's safety and environmental management plans.<br>• Follow the Seqwater Engineering Design, Construction, Operation and Maintenance Procedure (PRO-01617) to make sure that the relevant Seqwater engineering standards are complied with during the project's delivery.<br>• Notify Workplace Health and Safety Queensland (WHSQ) of the abandonment of an underground storage system used to store flammable gases or flammable liquids as soon as practicable after the storage system is abandoned as part of a project. |
| Workers | • Participate in the development of hazardous chemical risk assessments.<br>• Comply with the requirements of the SDS and hazardous chemical risk assessment associated with the chemical being used.<br>• Check that all SDS onsite are current and within date. |

# 8. References

## 8.1. Legislation

| Description |
|---|
| *Australian Dangerous Good Guide* |
| *Environmental Protection Act 1992* |
| *Environmental Protection Regulation 2014* |
| *Managing Hazardous Chemicals in the Workplace Code of Practice 2013 (Qld)* |
| *Transport Operations (Road Use Management—Dangerous Goods) Regulation 2018* (Qld) |
| *Work Health and Safety Act 2011* (Qld) |
| *Work Health and Safety Regulation 2011* (Qld) |
| *Electrical Safety Act 2002* (Qld) |
| *Electrical Safety Regulation 2013* (Qld) |
| *Workplace Exposure Standard for Airborne Contaminants* |

## 8.2. Procedures, Documents, Forms and Templates

| Description | Location |
|---|---|
| PRO-00870 Consultation, Communication and Issue Resolution Procedure | |
| PRO-00657 Hazard Identification and Risk Management Procedure | |
| PRO-00881 Personal Protective Equipment Procedure | REX |

| Description | Location |
|---|---|
| D15/10244: 20160315 - Southern Region - Environmental Authority EPPR00881713 | REX |
| D15/10250: 20230330- Central Region - Environmental Authority EPPR00640413 | REX |
| D15/10256: 20180322 Northern Region Environmental Authority EPPR00511713 | REX |
| ERP-00079 Emergency Preparedness and Response Procedure | REX |
| FRM-00025 Purchasing and Receiving Hazardous Substances Form | REX |
| FRM-00611 Hazardous Chemicals Risk Assessment Form | REX |
| GDE-00361 Drinking Water Treatment Chemical Guideline | REX |
| PRO-00020 Health Monitoring and Immunisations Procedure | REX |
| PRO-00867 Safe Work with Plant Procedure | REX |
| PRO-01496 Regulated and Trackable Waste Management Procedure | REX |
| PRO-01514 Procurement Procedure | REX |
| PRO-01617 Engineering Standard X-PRO-STD-009 Engineering Design, Construction, Operation and Maintenance Procedure | REX |
| RSK-00481 Combined Generic SWMS | REX |
| Site specific Incident and Emergency Response Plans (IERPs) | REX |
| SPE-00442 Seqwater Baseline Security Measures Standard | REX |
| TEM-00013 Safe Work Method Statement (SWMS) Template | REX |

# Appendix A – Australian Standards

| No. | Title |
|---|---|
| AS 1319 | Safety signs for the occupational environment |
| AS 1345 | Identification of the contents of pipes, conduits and ducts |
| AS 1596 | The storage and handling of LP Gas |
| AS 1940 | The storage and handling of flammable and combustible liquid |
| AS 1894 | The storage and handling of non–flammable cryogenic and refrigerated liquids |
| AS 2022 | Anhydrous ammonia – storage and handling |
| AS 2057 | The storage and handling of pesticides |
| AS 2507 | The storage and handling of agricultural and veterinary chemicals |
| AS 2714 | The storage and handling of hazardous chemical materials – class 5.2 substances (organic peroxides) |
| AS 2927 | The storage and handling of liquefied chlorine gas |
| AS 3780 | The storage and handling of corrosive substances |
| AS/NZS 3833 | The storage and handling of mixed classes of dangerous goods on packages and intermediate bulk containers |
| AS 4326 | The storage and handling of oxidizing agents |
| AS 4332 | The storage and handling of gases in cylinders |
| AS/NZS 4452 | The storage and handling of toxic substances |
| AS/NZS 4681 | The storage and handling of class 9 (miscellaneous dangerous goods and articles) |
| AS/NZS 60079.10.1 | Explosive atmospheres – Classification of areas – Explosive gas atmospheres |
| AS/NZS 60079.10.2 | Explosive atmospheres – Classification of areas – Combustible dust atmospheres |

# Appendix B – Examples of chemical labels

**UNLEADED 91 (REGULAR UNLEADED PETROL)**

| | |
|---|---|
| **Supplier** | BP AUSTRALIA PTY LTD, Level 17, 717 Bourke St, Docklands, VIC, Australia, 3008. (03) 9268 4111 |
| **Emergency** | 1800 14 14 74 within Australia or +61 2 8014 4558 |
| **Contains** | GASOLINE (>0.1% W/W BENZENE) (>90%) • BENZENE (<1%) • DIISOPROPYL ETHER (<1%) • POLYCYCLIC AROMATIC HYDROCARBONS (PAH) (<1%) • TERT-BUTYL ALCOHOL (<1%) • TERT-BUTYL METHYL ETHER (<1%) |

**HAZARDS IDENTIFICATION**

**CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA**

**DANGER**

**Extremely flammable liquid and vapour.**
**May be fatal if swallowed and enters airways.**
**Causes skin irritation.**
**May cause drowsiness or dizziness.**
**May cause genetic defects.**
**May cause cancer.**
**Toxic to aquatic life with long lasting effects.**

Obtain special instructions before use. • Do not handle until all safety precautions have been read and understood. • Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. • Keep container tightly closed. • Ground and bond container and receiving equipment. • Use explosion-proof electrical/ventilating/lighting equipment. • Take action to prevent static discharges. • Avoid breathing dust/fume/gas/mist/vapours/spray. • Wash thoroughly after handling. • Use only outdoors or in a well-ventilated area. • Avoid release to the environment. • Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

**FIRST AID MEASURES**

| | |
|---|---|
| **Eye** | If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. |
| **Inhalation** | If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing. |
| **Skin** | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor. |
| **Ingestion** | For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. |

**FLAMMABILITY**

| | | | |
|---|---|---|---|
| **Flammability** | HIGHLY FLAMMABLE | **Flash Point** | < -40°C (cc) |
| **LEL** | 1.4 % | **UEL** | 7.6 % |
| **Autoignition Temp.** | > 350°C | **Hazchem Code** | 3YE |

**EMERGENCY PROCEDURES**

Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Ventilate area where possible. Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition. Prevent spill entering drains or waterways.

**PERSONAL PROTECTIVE EQUIPMENT**

No PPE has been specified for this product.

## Figure 1 - Label printable from ChemAlert

**UNLEADED 91 (REGULAR UNLEADED PETROL)**

**Supplier:** BP AUSTRALIA PTY LTD **Emergency:** 1800 14 14 74 within Australia or +61 2 8014 4558

**Ingredients:** GASOLINE (>0.1% W/W BENZENE) (>90%) • BENZENE (<1%) • DIISOPROPYL ETHER (<1%) • POLYCYCLIC AROMATIC HYDROCARBONS (PAH) (<1%) • TERT-BUTYL ALCOHOL (<1%) • TERT-BUTYL METHYL ETHER (<1%)

**DANGER**

Flam. Liq. 1, H224 • Asp. Tox. 1, H304 • Skin Irrit. 2, H315 • STOT SE 3, H336 • Muta. 1B, H340 • Carc. 1B, H350 • Aquatic Chronic 2, H411

Hazchem: 3YE

*Expiry: Not Specified* Refer to ChemAlert Full Report or SDS before use.

## Figure 2 - Label for small containers

# Appendix C – Placard load limits for transportation

| Chemical | Load limit |
|---|---|
| FLUORIDE (Class 6.1) | <1000kg (in receptacles holding <500kg) |
| CHLORINE (GAS) (Class 2.3) | <250kg (3X70kg cylinders) |
| AMMONIA AQUEOUS (25%) (Class 8) | <1000L (in receptacles holding <500L) |
| SODIUM HYPOCHLORITE (10%) (Class 8) | <1000L (in receptacles holding <500L) |
| SODIUM HYDROXIDE SOLUTION (33–50%) (Class 8) | <1000L (in receptacles holding <500L) |
| SODIUM HYDROXIDE SOLID (Class 8) | <1000kg (in receptacles holding <500kg) |
| Petrol | <250L |
| Diesel | <1000L (in receptacles holding <500L), refer to notes below for IBC. |
| Acetylene | <250L e.g 5 G size cylinders |
| Oxygen | <250L e.g 5 G size cylinders |
| LPG | <250L e.g 5 G size cylinders |
| OZONE (Class 2.2) | N/A (not transported by Seqwater) |
| HYDROCHLORIC ACID (33%) (Class 8) | <1000L (in receptacles holding <500L) |
| HYDRATED LIME | N/A (non–dangerous good) |
| ULTRION 8588 (Class 8) | <1000L (in receptacles holding <500L) |
| POTASSIUM PERMANGANATE (Class 5.1) | <1000kg (in receptacles holding <500kg) |
| ACTIVATED CARBON (Class 4.2) | <1000kg (in receptacles holding <500kg) |
| ALUMINIUM SULFATE (50%) | N/A (non–dangerous good) |
| SODA ASH | N/A (non–dangerous good) |

**NB:** The vehicle must be licensed, and the driver must hold a dangerous goods driver license If a vehicle is used to transport -

(a) dangerous goods that are in a receptacle with a capacity of more than 500L; or

(b) more than 500kg of dangerous goods in a receptacle. **EXEMPTION:** No DG license required for IBC's up to 3000L, not filled or emptied on vehicle, however this would be a placard load.

# Appendix D – Placard and manifest quantities

| Item No. | Chemical Name | DG Class | GHS Classification | Packing Group | Manifest Quantity | Placard Quantity |
|---|---|---|---|---|---|---|
| 1 | Sodium Hydroxide Solution (33–50%; Caustic soda) | 8 | Skin corrosion/irritation, Category 1A | II | 500 kg or L | 50 kg or L |
| 2 | Hydrochloric Acid (33%) | 8 | Skin corrosion/irritation, Category 1A | II | 500 kg or L | 50 kg or L |
| 3 | Ammonia Aqueous (25%) | 8 | Skin corrosion/irritation, Category 1B<br>Acute toxicity (inhalation), Category 3 | III | 2500 kg or L | 250 kg or L |
| 4 | Ammonia Anhydrous (gas) | 2.3<br>Sub R 8 | Gases under pressure with skin corrosion/irritation, Category 1B | None | 500L | 50L |
| 5 | Sodium Hypochlorite (10%) | 8 | Skin corrosion/irritation, Category 1B | III | 2500 kg or L | 250 kg or L |
| 6 | Sodium Fluorosilicate | 6.1 | Acute toxicity (inhalation), Category 3 | III | 10 000 kg or L | 1000 kg or L |
| 7 | Sodium Fluoride | 6.1 | Acute toxicity (inhalation), Category 3 | III | 10 000 kg or L | 1000 kg or L |
| 8 | Potassium Permanganate | 5.1 | Oxidising solids, Category 2<br>Acute toxicity (oral), Category 4 | II | 2500 kg or L | 250 kg or L |
| 9 | Chlorine | 2.3 | Gases under pressure with acute toxicity (inhalation), Category 3 skin corrosion/irritation, Category 2 | None | 500L | 50L |
| 10 | Petroleum Fuel | 3 | Flammable Liquids Category 2 | II | 2500 kg or L | 250 kg or L |
| 11 | Diesel fuel | 3 | Flammable Liquids Category 3 | III | 10 000 kg or L | 1000 kg or L |
| 12 | Ozone | 2.2<br>Sub R 5.1 | Oxidising Gas, Category 1 | None | 500 kg or L | 50 kg or L |

| Item No. | Chemical Name | DG Class | GHS Classification | Packing Group | Manifest Quantity | Placard Quantity |
|---|---|---|---|---|---|---|
| 13 | Carbon Dioxide | 2.2 | Gases under pressure | None | 10 000 kg or L | 1000 kg or L |
| 14 | Oxygen (refrigerated liquid) | 2.2<br>Sub R 5.1 | Oxidising liquid Category 1 | None | 10 000 kg or L | 1000 kg or L |
| 15 | Acetylene | 2.1 | Flammable gases Category 1 | None | 5000 L | 200 L |
| 16 | Aluminum Sulphate | 8 | Skin Irritation – Category 2<br>Eye Damage – Category 1 | None | N/A | N/A |
| 17 | Sulfuric acid solution | 8 | Corrosive to Metals – Category 1<br>Skin Corrosion – Subcategory 1A<br>Eye Damage – Category 1<br>Specific target organ toxicity (single exposure) – Category 3 | II | 500L | 50L |

# Appendix E –Seqwater's manifest quantity workplaces (MQWs)

| Site | Site owner / manager | IERP Doc No. |
|---|---|---|
| Alexandra Hills Reservoir | Coordinator Supply Systems | ERP-00112 |
| Aspley Reservoir Complex | Coordinator Supply Systems | ERP-00242 |
| Beaudesert WTP | Coordinator Scenic Rime | ERP-00087 |
| Capalaba WTP | Coordinator Supply Operations Southern Region | ERP-00089 |
| Chambers Flat WQMF | Coordinator Supply Systems | ERP-00106 |
| Ewen Maddock WTP | Coordinator Supply Sunshine Coast | ERP-00091 |
| Ferntree Balance Tank | Coordinator Supply Systems | ERP-00114 |
| Gramzow Road WQMF | Coordinator Supply Systems | ERP-00115 |
| Image Flat WTP | Coordinator Supply Sunshine Coast | ERP-00092 |
| Kilcoy WTP | Coordinator Supply Moreton and Somerset North | ERP-00105 |
| Landers Shute WTP | Coordinator Supply Sunshine Coast | ERP-00093 |
| Landsborough WQMF | Coordinator Supply Systems | ERP-00108 |
| Lowood WTP | Operations Coordinator Water Treatment Central | ERP-00094 |
| Molendinar WTP | Coordinator Supply Operations Southern Region | ERP-00095 |
| Mt Crosby East Bank WTP | Operations Coordinator Water Treatment Central | ERP-00096 |
| Mt Crosby Holts Hill | Operations Coordinator Water Treatment Central | ERP-00113 |
| Mt Crosby West Bank WTP | Operations Coordinator Water Treatment Central | ERP-00102 |
| Mudgeeraba WTP | Coordinator Supply Operations Southern Region | ERP-00097 |
| Noosa WQMF | Coordinator Supply Systems | ERP-00116 |
| Noosa WTP | Coordinator Supply Sunshine Coast | ERP-00122 |
| North Pine WTP | Coordinator Supply Moreton and Somerset North | ERP-00098 |
| North Stradbroke Island WTP | Coordinator Supply Operations Southern Region | ERP-00099 |
| Stapylton Balance Tank | Coordinator Supply Systems | ERP-00117 |

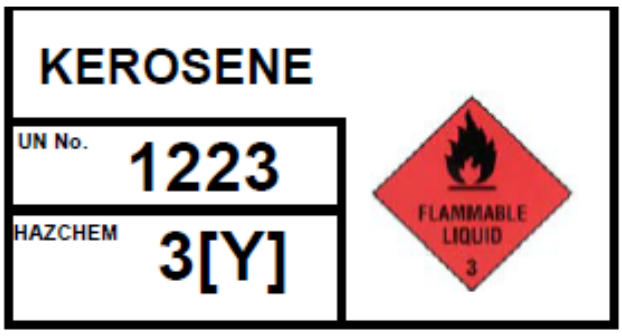
# Appendix F – Examples of Placards

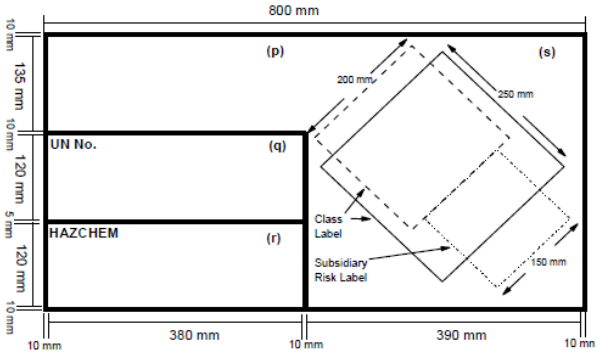
### Outer Warning Placard

To be displayed at each entrance to the workplace where emergency services may enter the workplace. The dimension and form of the Outer Warning Placard must comply with Schedule 13 of *Work Health and Safety Regulation 2011* (Qld).


### Information Placard

To be displayed on or next to each container or storage area in which the hazardous chemicals are stored. The dimension and form of the Placard must comply with Schedule 13 of *Work Health and Safety Regulation 2011* (Qld).



# Appendix G - List of Drinking Water Treatment Chemicals (DWTC) , Completed Risk Assessments and Minimum PPE Requirements

Refer to the Drinking Water Treatment Chemical Guideline (GDE-00361) for further information about managing the risks associated with storage, use and disposal of Seqwater's bulk chemicals.

| Name of Chemical | Skin | Eyes | Inhalation | Risk assessment reference |
|---|---|---|---|---|
| Aqueous Ammonia | Overalls, impervious apron, impervious gloves, rubber boots, face shield | Chemical goggles, face shield, Full face mask with ABEK-3 (stores supply) | For prolonged use or if risk assessment indicates a risk or at high vapour levels wear supplied air respirator.<br>Full face mask with ABEK-3 (stores supply) and SCBA or an Air-line respirator as required | D21/186839 |
| Calcium hydroxide (Lime Hydrated) | Gloves of impervious material. | Safety glasses with full face shield or Chemical goggles | Respirator with a replaceable dust/particulate filter should be used | D21/186840 |
| Carbon dioxide liquefied gas (>99.5% CO2) | Wear leather safety gloves and safety shoes when handling cylinders/ vessels. | Goggles or face shield to EN166 should be used to avoid exposure to liquid splashes. | Where inhalation risk exists wear SCBA or an Air-line respirator. | D21/186842 |
| Chlorine gas (70 kg cylinder and 920 kg drum) | Coveralls, Long Sleeve Shirt, Long Trousers, Safety Boots, Gloves (thermal protection) (dependent on task) | Long Line Respirator Mask, Chemical Goggles, Full Face Shield or Air Supplied Mask | Long Line Respirator / SCBA (dependent on task) | D21/188978 |

| Name of Chemical | Skin | Eyes | Inhalation | Risk assessment reference |
|---|---|---|---|---|
| | | (dependent on task) | | |
| Citric Acid | Coverall, gloves PVC or rubber, safety boots | Chemical googles | Mask with Type A Filter | D22/229782 |
| Hydrochloric Acid 32% | Wear full-length PVC or full-length rubber gloves.<br>Wear coveralls and rubber boots and a PVC apron. | Wear splash-proof goggles.<br>When using large quantities or where heavy contamination is likely, wear a face shield on top of the goggles. | Where an inhalation risk exists, wear a Full-face Type B (Inorganic and Acid gas) respirator. At high vapour levels, wear an Air-line respirator. | D21/186850 |
| Liquid aluminum sulphate (Alum) 30-60% | Overalls, safety boots, impervious gloves (PVC or rubber). chemical goggles. | Chemical goggles | If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. | D21/186832 |
| Liquid Oxygen | If risk of exposure exists - Wear leather safety gloves and safety shoes when handling cylinders/ vessels. | If risk of exposure exists - Safety glasses or face shield should be used to avoid exposure to liquid splashes. | Not required in normal situation, where inhalation risk exists in an emergency wear SCBA or an Air-line respirator. | D22/238174 |
| Magnasol 576 | Apron, protecting boots, chemical-protection suit | Safety glasses with side-shields | Not anticipated, however respiratory protection in case of vapour/aerosol release is expected | D21/186858 |

| Name of Chemical | Skin | Eyes | Inhalation | Risk assessment reference |
|---|---|---|---|---|
| Magnasol 589 | Chemical resistant protective gloves Body protection must be chosen depending on activity and possible exposure, e.g., apron, protecting boots, chemical-protection suit | Safety glasses with side-shields (frame goggles) | Respiratory protection: Respiratory protection in case of vapour/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g., EN 143 or 149, Type P2 or FFP2) | D21/186865 |
| Magnasol 589 Liquid | Body protection must be chosen depending on activity and possible exposure, e.g., apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust). | Safety glasses with side-shields/ Chemical goggles if splash risk exists | Respiratory protection in case of vapour/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g., EN 143 or 149, Type P2 or FFP2) | D21/186862 |
| Oxalic Acid | Nitrile Gloves, Chemical Safety Glasses | Chemical Safety Glasses | Nil | D21/186871 |
| Ozone | Wear leather or insulated gloves, safety boots | Safety glasses | Where an inhalation risk exists, wear an Air-line respirator or SCBA in emergency response to a leak. | D22/234841 |
| Potassium Permanganate 100% (solid crystalline) | Overalls, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots. | Chemical goggles | Dust mask (dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716) Air supplied respirator where the risk is high | D21/186857 |

| Name of Chemical | Skin | Eyes | Inhalation | Risk assessment reference |
|---|---|---|---|---|
| Soda Ash (Sodium Carbonate) | Wear overalls, impervious gloves | chemical goggles | If dust exists, wear dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716 | D22/202917 |
| Sodium Bisulfite | Coverall, gloves PVC or rubber, safety boots | Chemical googles and full-face mask | Mask with Type A Filter For emergency response wear SCBA or Air-line respirator | D22/229791 |
| Sodium fluoride (NaF) | Protective gloves rubber or plastic | Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used | Full-face particle respirator type P3 (EN 143) respirator cartridges<br>When loading and in spill cleanup use Powered Air Purifying Respirator (PAPR) | D21/186867 |
| Sodium Fluorosilicate ($Na_2SiF_6$) | Wear PVC or rubber gloves. Wear coveralls. | Wear dust-proof goggles or full-face shield | Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter or a Full-face Class P3 (Particulate) respirator. | D21/186831 |
| Sodium Hydroxide Solution (25%, 32% and 50%) | Overalls, impervious apron, impervious elbow length gloves, rubber boots, face shield | Goggles, face shield. Safety glasses only in use where no splash risk. | Where risk of breathing mist or vapour, wear respirator filter type AB-P, SCBA for high vapour levels or Air-line respirator | D21/186879 |

| Name of Chemical | Skin | Eyes | Inhalation | Risk assessment reference |
|---|---|---|---|---|
| Sodium Hypochlorite (10%) | Wear synthetic apron, other protective equipment as necessary to prevent skin contact. | Wear chemical splash goggles. For continued or severe exposure wear a face shield over the goggles. | If ventilation is inadequate, use respirator that will protect against organic vapour and dust/ mist. Respiratory protection should conform to AS/NZS 1715 and AS/NZS 1716. | D21/189008 |
| Sulphuric Acid 70% | Wear PVC or rubber gloves.<br>Wear coveralls. When using large quantities or where heavy contamination is likely, wear rubber boots and a PVC apron. | Wear safety glasses and full face shield while operating the forklift for unloading and when operate a valve for delivery.<br>Where a risk of exposure, wear splash-proof goggles and full face shield. | Where an inhalation risk exists, wear a Type B (Inorganic gases and vapours) respirator.<br>If spraying, with prolonged use, or if in confined areas, wear an Air-line respirator. | D21/186891 |