ZDHC

ZDHC Chemical Management System Framework

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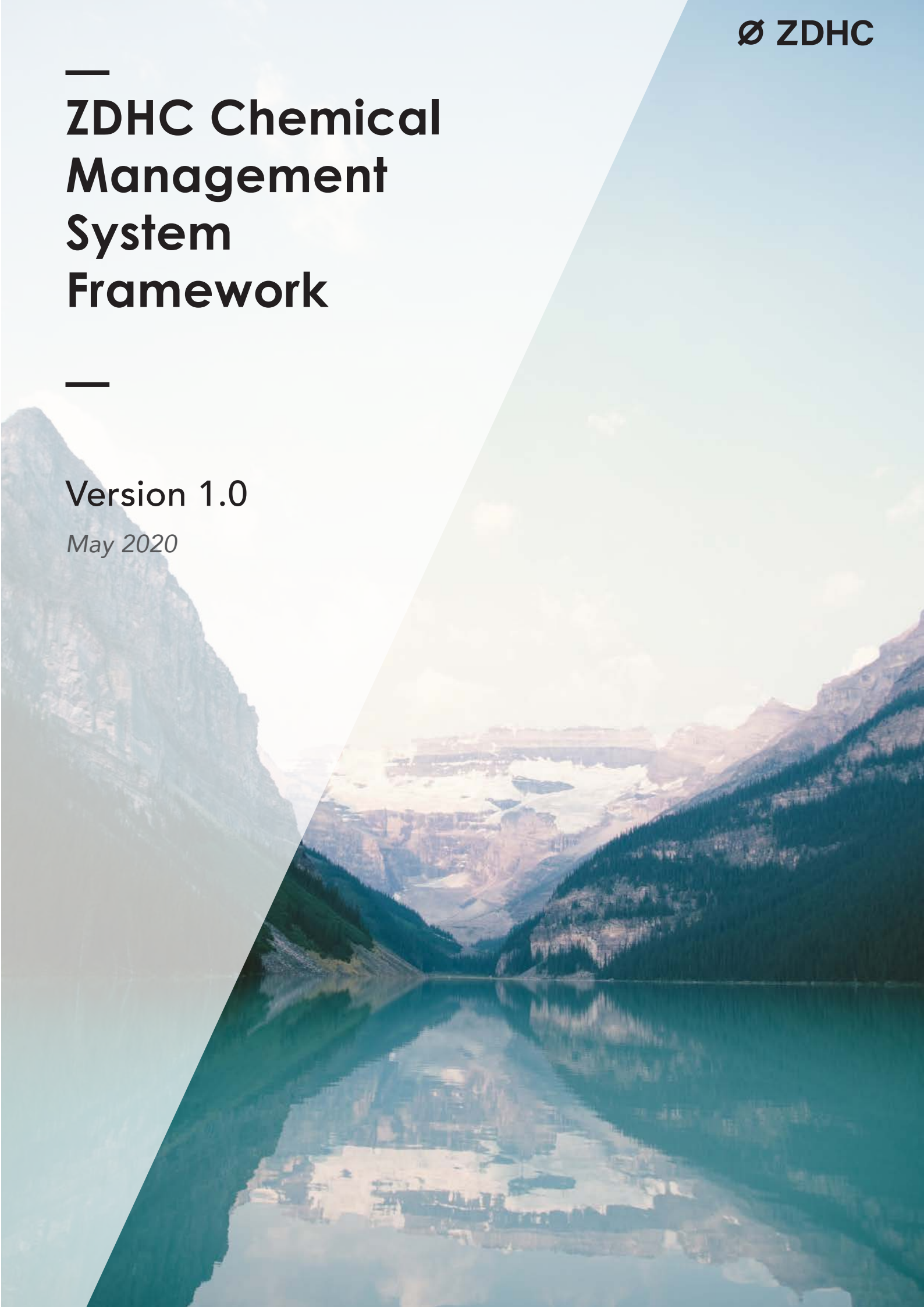

NOTES

The ZDHC CMS Framework is intended to either replace brand-specific requirements for chemical management and/or to be supportive or complimentary to such requirements.

The information in this ZDHC CMS Framework is provided for information only and does not

a) Guarantee compliance with or conformance to, any national or international environmental or workplace safety requirements including, but not limited to, relevant regulations and/or standards.
b) Guarantee compliance with or take the place of legal or regulatory requirements relating to the use, storage, and transport of chemical products.
c) Replace any national or international environmental or workplace safety requirements including, but not limited to, regulations and/or standards.

DISCLAIMERS

Whilst ZDHC takes every reasonable effort to make sure that the content of this Framework is as accurate as possible, ZDHC makes no claims, promises, or guarantees about the accuracy, completeness, or adequacy of the contents of this ZDHC Chemical Management System Framework.

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b) from any use, decision made or action taken or any other kind of reliance on the ZDHC CMS Framework by a reader or user of it and/or
c) for any results obtained or not obtained from the use of the ZDHC CMS Framework

Introduction

The ZDHC Foundation

The ZDHC Foundation oversees implementation of the Roadmap to Zero Programme and is a global industry collaboration of brands, value chain affiliates, and associates within the sports, fashion, luxury and outdoor industry.

The vision is widespread implementation of sustainable chemistry, driving innovation and best practices in the textile, apparel, leather and footwear industries to protect consumers, workers and the environment. Through collaborative engagement, standard setting and large-scale implementation ZDHC advances the industry towards zero discharge of hazardous chemicals. ZDHC takes a holistic approach to sustainable chemical management and enables tangible progress in the wider industry through a number of reference guides, practical tools, capacity building and innovation projects. More information about ZDHC at www.roadmaptozero.com. For an overview of applicable reference guidance and practical tools, refer to the Appendix.

ZDHC Chemical Management System

A fundamental principle of the ZDHC Foundation is to provide direction for implementing a Chemical Management System (CMS) in alignment with the ZDHC Foundation's mission, vision, objectives, and tools. A sound chemical management system is paramount to worker safety and will reduce environmental impacts to the community and the broader environment. A CMS is therefore one of the cornerstones for ensuring continuous improvement towards our goal of zero discharge of hazardous chemicals. The CMS can be part of the wider Environmental Management System of the organisation which addresses the complete environmental impact of the organisation.

A management approach allows for minimisation of environmental impact and provides an entry point for different stakeholders in the supply chain. The ZDHC CMS Manual will consist of two components;

1. ZDHC CMS Framework (the Framework), this document will list the minimum requirements for a CMS according to the ZDHC.
2. ZDHC Technical Industry Guide, this document will provide more specific, technical

information to support implementation of the ZDHC CMS Framework in a facility.

The ZDHC CMS Framework should be easily understood while accommodating the complexities of the ZDHC Programme and the supply chain chemistry applications. The ZDHC CMS Framework builds on applicable tools available within the ZDHC and on management standards and other applicable frameworks available within and beyond the industry.

This Framework's minimum requirements are complementary to any regulatory, operational or product requirements and shall be used to measure the success of an organisation's own Chemical Management System. The ZDHC Foundation is responsible for creating, updating, and maintaining this Framework which shall be reviewed and updated as needed.

Scope of the ZDHC CMS Framework

The different stakeholders in the supply chain considered for the ZDHC CMS Framework are: the chemical industry, brands, suppliers, facilities and others. Each of the stakeholders contributes to the success of implementing all pieces within a CMS.

Structure of the ZDHC CMS Framework

The ZDHC CMS Framework addresses actions to be implemented across operations of all ZDHC Focus Areas including Input-, Process- and Output- Management.

Each section consists of guidance that an organisation shall follow to create a systematic and thorough process for chemical operations throughout the value chain. The ultimate goal for any organisation's CMS is to create a culture that is committed to the safe, sustainable and environmentally responsible management and discharge of chemicals. This framework was purposefully designed to create minimum requirements while still maintaining flexibility in the details of implementation.

The scope of the ZDHC CMS Framework document covers all chemicals present onsite whether used in facilities, processing, and tooling operations, although certain sections of this Framework may apply specifically to a smaller subsection of the chemistries onsite.

Contents

Overview of a Chemical Management System

A quality chemical management system (CMS) should include the following key elements:

1. Policy
2. Strategy
3. Assessments
4. Health and Safety
5. Inventory
6. Storage and Handling
7. Output Management
8. Process Control
9. Continuous Improvements

1. Policy

A policy is a deliberate system of principles and practices to guide decisions and achieve rational outcomes. A chemical management policy should be the basis for an organisation's CMS. A policy is important to make sure each stakeholder is aware of the holistic goals of the organisation.

The policy on your CMS should include a policy statement that outlines your commitments to CMS and detail the current practices and procedures followed in your organisation, especially on purchasing, transparency and traceability policies.

1.1. Policy Statement

The policy statement is a high-level commitment of the organisation. Leadership should endorse a policy statement that is in alignment with the ZDHC vision.

The minimum requirements of this policy statement should include the commitment to:

- Sustainable chemical management including a commitment to adopt the ZDHC Manufacturing Restricted Substances List (ZDHC MRSL)
- Comply with applicable local laws and regulations
- Minimise chemical risk to employees and the environment including a commitment to adopt the ZDHC Wastewater Guidelines (WWG)
- Traceability
- Transparency

The Policy Statement should be communicated to the relevant internal and external stakeholders who are invested in or essential to achieve the goals.

1.2. Implementation of policy statement

To implement the commitments stated in the policy statement the organisations should have;

- A Purchasing Policy
- A Traceability Policy
- A Transparency Policy

1.2.1 Purchasing Policy

The objective of a purchasing policy is to reduce risk, liability and cost associated with procurement. When purchasing any chemicals, raw materials, intermediates, or finished products, this policy will clearly specify what can and cannot be ordered and identify what may need special handling.

Careful consideration of the legal, safety, ZDHC MRSL, RSL, and PRSL requirements prior to the purchase of chemicals reduces not only the risk of hazardous chemicals entering into production processes but also the amount that will be managed onsite through storage, handling and use. This policy should include, at minimum:

- A goal for ZDHC MRSL Conformant purchases
- Guidelines, technical specifications or other lists relevant to obtaining chemicals from third parties such as direct chemical formulators, agents, other facilities, and chemical donations

1.2.2 Traceability Policy

The goal of traceability is to understand an organisation's supply chain and its processes. It is needed for incident management, your continuous improvement plan and to inform transparency.

An organisation needs to understand what chemical products and processes are used to manufacture a product. The minimum requirement for traceability is the ability of an organisation to trace the lot number of the chemical used

- from purchase to the final product manufactured
- from purchase to end-use in the facility

1.2.3 Transparency Policy

Transparency is sharing relevant information with specific stakeholders. These stakeholders may include brand/retail buyers, supply chain partners, industry associations, local governments, and non-governmental organizations (NGOs).

Stakeholders should be engaged to determine the information needed and the preferred communication channels.

The minimum requirements are:

  - Implement a ZDHC Tool for Input such as ZDHC InCheck, ZDHC ChemCheck or equivalent
  - Implement a ZDHC Tool for Output such as ZDHC ClearStream or equivalent
  - Implement accepted industry assessment tools that meet the ZDHC Programme requirements and are kept up to date accordingly
- Requirement to properly manage and use Safety Data Sheets (SDS) and Technical Data Sheets (TDS) to select the chemical products
- Requirement for each new chemical to be assessed. Chemicals already purchased may be re-assessed in accordance with any relevant requirements

The purchasing team shall have an SOP to implement the policy.

2. Strategy

A strategy is a plan of action designed to achieve a long-term or overall goal. A Chemical Management Strategy is important to enable long term business planning and implementation of the organisations' chemical commitments and policies.

2.1. Chemical Management Strategy

In different organisations, strategies may be set by different teams, but a strategy is required nonetheless. When formulating your strategy, at a minimum, it should include:

- Goals of the organisation for chemical management, including goals for the reduction of the use of chemicals and the minimisation or elimination of hazardous chemicals
- Timebound actions required to achieve those goals
- Resource requirements and methods to implement, monitor, and continually improve the strategy

A robust strategy with the above information will enable the CMS to be successful and to grow and mature over time.

2.2. Define the scope of the Chemical Management System

The scope of a CMS needs to be defined by describing and documenting the extent of the value chain to which it applies. The scope may range from only the organisation's specific operating unit(s) or may extend through all parts of its value chain. At a minimum, the strategy should address:

- the immediate business entity
- engagement with the next level of the supply value chain (such as supplier, subcontractor)

While there is flexibility in choosing the scope, credibility of the CMS is dependent on choosing logical business system boundaries.

2.3. Implementation of the Chemical Management Strategy

To implement the strategy, its goals and commitments must be simplified into steps and documented. This type of documentation is often called an implementation plan, and is shared with relevant stakeholders who have roles and responsibilities to implement the strategy.

Minimum requirements of the implementation plan are:

- Detailed plan with steps and actions (target dates, completion dates, etc.) to meet the strategy
- Budget needed for the implementation of the CMS (short term, long term, capital needs, etc.)
- Resource availability and necessary skills (personnel, financial, technical, etc.) (Note: this may include a plan for the workforce to get the necessary skills via the ZDHC Academy)
- Each requirement assigned to a team or team member who is fully responsible for the implementation
- Tools (including the ZDHC tools) and other technologies (such as the ZDHC Gateway) to be used or purchased to support implementation
- Plan to implement required assessments prior to purchase
- Internal metrics to measure success

Ongoing monitoring should be conducted to understand if the implementation plan is on target or needs adjustment to meet the stated goals. It will be a living document that thrives on continuous improvement.

3. Assessments

Assessments are important to ensure that chemicals are purchased and used in agreement with the CMS. Some assessments may be unique to your business, though the majority are universal for all types and uses of chemicals. This chapter focuses on the universal assessments, including regulatory review, chemical hazard assessment, health and safety considerations, supply chain requirements and alternative chemical assessments.

3.1. Regulatory Assessment

Compliance with legal requirements and permits issued by authorities is required. To achieve this, assessments shall be conducted for identifying and monitoring regulations applicable to chemical management standards and environmental permits. The assessment process should, at a minimum:

- Assign initial regulatory identification responsibilities to a specific position or team
- State currently known applicable regulatory jurisdictions, regulations, and permits necessary to operate (e.g., city, state/province, country)
- Assign on-going regulatory monitoring responsibilities to a specific position or team
- Describe how management will be informed of significant regulatory changes and/or when permit constraints or operational limits are being approached
- Review new regulations and verify compliance or establish steps to ensure future adherence to these requirements

This regulatory assessment and monitoring process should be documented and communicated through standard operating procedures (SOPs) and shall be updated at least annually.

3.2.Chemical Hazard & Risk Assessment

Hazardous chemicals are those that may cause harm to property, humans, and the environment. Risk is determined by looking at both associated hazards and the potential for exposure. A process should be implemented to assess chemical hazards and risks.

Basic hazard information is available from many sources such as container labels, SDS, ZDHC Gateway, employees, chemists, chemical formulators and chemical databases.

At minimum, these types of hazard and risk assessments must include:

- Validation that purchased chemicals meet ZDHC MRSL requirements by checking conformance via the ZDHC Gateway or due-diligence that ZDHC MRSL requirements are met while encouraging the chemical formulator to register chemical products to the ZDHC Gateway
- Validation that all chemicals have a proper SDS available in the official or local language
- Assessments of risks to health & safety of employees that include:
  - Identification of what chemicals employees may be exposed to
  - Identification of what harm exposure to chemicals may cause
  - Identification of what activities may increase exposure risk (for example, pouring a chemical may result in exposure from potential spills or splashes)
  - Identification of the chemical products and their compatibility with other chemicals during storage, transportation and use
- Identification of what risks need to be controlled, including across property, human health and the environment. The risk significance may depend on the duration and frequency of exposure as well as the concentration of the substance involved. Consider any operational risks as well such as leaks, overflow of tanks, fire, flood, waste storage, and chemical handling.

3.3. Supply Chain Assessment

Additional chemical requirements may impact the organisation's business goals. To prevent non-conformities, an overview of all relevant chemical requirements from customers should be maintained.

To have a holistic approach we also added points beyond Chemical Management, this assessment should include at minimum;

- Social Compliance
- Health & Safety

- ZDHC MRSL
- RSL and PRSL
- Purchasing Requirements
- Quality Requirements

This information needs to be maintained on a regular basis and requirements are generally communicated via contract, product specifications and supplier declarations to your suppliers and subcontractors. This is an ongoing process, requiring a periodic review and update to ensure compliance.

3.4. Alternative Assessment

An alternative assessment for chemicals is a process to minimise chemicals of concern while considering performance and economic viability through identifying, comparing and selecting safer alternatives. A primary goal of an alternatives assessment is to reduce risk to property, humans and the environment by identifying less hazardous materials.

A chemical alternatives assessment may be used to prioritise replacement of hazardous chemicals or chemical products. To avoid regrettable substitutions, a thorough assessment of the proposed alternative should follow a transparent, science-based, simple and reasonable system that evaluates chemicals and/or chemical products.

4. Health and Safety

Measures that address Health and Safety are essential to ensure that employees and the environment are protected from the chemicals used at a facility. To ensure chemicals are used properly, employees need to be educated on the chemicals used, how to properly control their exposure and how to protect themselves and their facility during an emergency.

Please note that other general health and safety parameters should be assessed, such as:

- general housekeeping;
- hygiene measures;
- occupational health hazards;
- fire & heat impacts; and
- machinery & piping maintenance.

4.1. Exposure Control

Based on the assessments mentioned above, protective measures should be taken for identified exposure risks. To complete the exposure control analysis, an SOP should be put in place to make sure that control measures are identified and used.

As part of the exposure control analysis, the following minimum requirements of exposure must be reviewed:

- Ingestion
- Touch (i.e. Dermal)
- Inhalation
- Environmental
- Community

Once exposure is assessed, then it is necessary to choose the best method of control. The goal is to protect workers and/or responders from inadvertent exposure whether it is during normal usage or from an accident or incident despite appropriate management systems and operational procedures. The following practices can be considered, starting at the top and proceeding forward in order:

- Chemical elimination
- Chemical substitution
- Engineering controls
- Administrative controls
- Lastly, knowing the other controls, the information in the SDS, any chemical reactions, and the task at hand, choose the appropriate personal protective equipment to protect the employee

4.2. Personal Protective Equipment (PPE)

PPE is a necessary part of a safety control concept and is the last barrier between a human and a chemical exposure. It should be used for protection from accidents and incidents that may occur despite appropriate management control systems and operational procedures.

At minimum, each organisation shall:

- Identify the types of PPE needed in the facility. Where possible, select PPE types which may cover all possible chemical uses appropriately. Ensure that chemicals are also segregated based on the type of PPE required to handle. This segregation will help educate workers so they can understand the appropriate PPE to be used for each chemical.
- Create a SOP to identify and use appropriate PPE. The right PPE can be determined based on the SDS, regulations, standards, specific tasks, required performance of PPE, and other special requirements. Some examples of PPE appropriate for the chemicals could be gloves, protective masks, long handle scoops, etc.
- Ensure that PPE is always available to employees working in areas where potential exposure has been identified.

- Develop an exposure prevention plan for each chemical in use and storage area to ensure strategic placement and accessibility during routine work periods and emergencies. This includes PPE effectiveness reviews and replacement when necessary or expired.

4.3. Emergency Procedures

An emergency plan and procedure can help protect property, workers and the community in the case of a chemical emergency.

At minimum, organisations need to have in place:

- A procedure to identify and respond to potential chemical and natural incidents related but not limited to spills, fires, accidents, injuries to employees and damage to buildings and equipment.
- Detailed instructions on how to evacuate the building and contain contact names/ information for individuals in charge of the evacuation.
- Twice per year testing of procedures which shall include all employees, sub-contractors, EMS teams, and depending on the size and scope of the drill, and the outside community EMS team.
- Consultation of appropriate municipal officials since control may be exercised by the local government in major emergencies and additional resources may be available.
- Communication and training to ensure adequate performance in times of an emergency.
- Methods to update procedures where necessary after practice drills and actual emergencies. All drills and follow up should be documented.

5. Chemical Inventory

A Chemical Inventory List (CIL) will assist your organisation with purchasing decisions, promote responsible chemical use, prevent pollution, increase traceability, simplify chemical handling decisions, and control disposal costs. For example, tracking chemical storage may indicate that excess chemicals are available and thus prevent unnecessary purchases.

5.1. Chemical Inventory List

A Chemical Inventory List is a list of all chemicals and/or chemical products kept or used in the facility, in processes and tooling/operations. An organisation should have a robust process for creating and updating a CIL.

The content of CIL should include, at minimum:

- the chemical name
- SDS location
- identification numbers (CAS no.) of hazardous substances
- hazard information
- conformance of the chemical products to the ZDHC MRSL
- amount of stock take or delivery or usage
- storage location

If chemical information is missing, there must be a corrective action plan to obtain this data from chemical formulators. The information on the CIL will also help you to track your goal towards ZDHC MRSL Conformance.

The Chemical Inventory List can be compiled by the following actions:

- stock take (items and quantities held in storage);
- delivery information (items and quantities delivered); and
- use information (items and quantities used).

The Chemical Inventory List should be regularly updated and its information maintained for purpose. It is recommended to follow at minimum the following frequency:

- Stock take, annually
- delivery, monthly
- usage information, monthly

The CIL should be maintained by a responsible person wherever and whenever chemicals are purchased, stored or used. The revision date should be clearly documented. Each chemical work area should always maintain an inventory of the chemicals according to the scope of work.

5.2. Safety Data Sheet Management

Safety Data Sheets (SDS) are widely recognised as a fundamental source of chemical information to identify and control the health and safety impacts from chemicals stored, used and discarded. If a facility is located in a region where the Global Harmonization System (GHS) has not been adopted, an equivalent standard needs to be adhered to ensure that all necessary information is complete and clear.

SDS must be provided by chemical formulators and, at minimum, should:

- be available in the official or local language(s)
- contain all relevant hazard information
- be kept in a central location and at the chemical's point of use so it is readily available for employees and supervisors to consult
- be reviewed and updated regularly to keep relevant amid changing regulations and sustainability efforts

A SDS provides basic information for employees to understand the safe use, storage of chemicals, spill containment methods and PPE. All employees handling chemicals should have the relevant training for understanding SDS files.

6. Storage and Handling

Chemical storage and handling is a foundation of your CMS. Procedures should be provided for handling chemicals in the safest way possible. Adequate storage and handling can prevent incidents such as spillages and accidents. Relevant training, such as training via the ZDHC Academy, for your employees should be given to make sure they have the knowledge to implement the procedures.

6.1. Chemical Labelling

Chemical containers and packaging should have clear identification of the chemical products they contain. The labels convey chemical safety information to the employees using simple and understandable words (in official or local language) and images to document the hazard characteristics and safe handling requirements.

Any container holding a chemical must be maintained in good condition with a legible label. The chemical label must contain the following information at minimum:

- Product Identifiers such as chemical name or trade name
- Chemical Formulator Name and contact details
- Lot number
- Harmonised signal word, where applicable
- Hazard pictograms such as GHS pictogram(s) or equal, where applicable
- Hazard statement (H-statement), where applicable
- Precautionary statement (P-statement), where applicable

The information on the chemical label should support the traceability of products/materials.

Best practices for labelling include other information such as:

- Manufacturing date
- End of life date

In case the packaging is too small or oddly shaped to contain all relevant information, include chemical identification and refer to where the additional required data may be found.

6.2. Chemical Handling

Chemical handling covers all types of chemical use, storage and transportation. Well defined chemical handling practices help to prevent the risk of environmental pollution, personal injury and economic implications.

The minimum requirements for proper chemical handling are:

- All actions recommended through chemical assessments must be implemented. This includes actions across chemical storage, PPE, etc.
- Clear communication of hazards must exist, including appropriate signage. So any employee knows whether the substance could expose them to a hazardous property.
- All employees who handle chemicals must have appropriate training and qualifications
- Employees who handle chemicals shall be knowledgeable in hazard communication implementation such as GHS standards
- Develop an SOP for Chemical Storage (incl. separation/ segregation/ isolation), Transportation, and Use. The SOP should contain information on handling chemicals in the safest way possible

7. Output Management

To avoid pollution and contamination to the surrounding environment and communities, organisations that generate output must have mechanisms, processes and procedures in place to manage, treat and discharge output streams properly. Output may be in multiple forms such as waste, wastewater, sludge, air, and product. All of the output should be considered in the organisations' CMS.

Output management can help the organisation to understand how well the CMS is implemented. By checking and monitoring your output you can track the progress of the organisation CMS goals.

For the purpose of this document, the specific processes for proper management of chemical waste, wastewater, sludge and air will be covered. As product is already covered by other industry tools. However, all products or materials leaving a facility need to meet the legal and customer requirements regarding chemical content.

Minimum requirements for output management require an organisation to;

- Define all output streams as identified during your assessments
- Ensure appropriate control mechanisms are implemented for all chemical wastes and discharges
- Set goals to reduce chemical wastes and discharges
- Maintain relevant records for the waste streams, volume and disposal
- Share relevant documents with the stakeholders in line with your transparency strategy

7.1. Wastewater and Sludge Management

Through the ZDHC Wastewater Guidelines (WWG), we define unified expectations concerning industrial (and mixed) wastewater quality, which includes sludge as by-product in most of the wastewater/effluent treatment plant (ETP). Domestic wastewater (only) does not fall within the scope of the ZDHC Wastewater Guidelines.
Organisations that generate and discharge (both directly and indirectly) industrial wastewater (and mixed) are expected at the minimum to take responsibility:

- To properly treat wastewater and sludge and meet legal requirements.
- To follow the sampling, testing and reporting requirements specified in the ZDHC WWG and Sampling and Analysis Plan,
- To publish wastewater test reports on the ZDHC Gateway - Wastewater Module, and
- To have a Root Cause Analysis and Corrective Action in place when there are any non-conformities.

7.2.Air Emissions Management

Air quality is an essential component for quality of life. Emissions generated from chemicals used to make products, as well as through onsite energy generation and operation of treatment systems all contribute to the local airshed. Through the ZDHC Air Emissions Guideline, we will define minimum requirements for the processes and facility activities.

At a minimum organisations must:

- Meet requirements for legal compliance
- Identify facility's sources of emissions and relevant discharge points
- Track air emissions from processes
- Track air emissions from facility operations
- Modernise equipment or install emissions control devices to protect workers and prevent emissions to the environment

7.3.Waste and Disposal

Every process will generate waste that will need to be collected and disposed of in accordance with local regulations.

Each organisation should have at minimum, a waste-specific procedure for proper:

- classification;
- collection;
- containment;
- transportation; and
- disposal.

8. Process Control

Processes, documents, and record keeping related to your CMS supports implementation, traceability, transparency and continuous improvement. Relevant employees should always be informed on where the latest documents are stored and have access to these documents.

8.1. Document and Record Control

Organisations should have a process in place to control documents and records that at minimum, covers all documents and records referred to in this framework.

The document and record control SOP should address:

- protection
- retrieval
- retention
- updates
- removal

There are many reasons to create robust document control practices, some of which include regulatory compliance, traceability, root cause analysis and corrective action plan.

8.2. Incident & Non-Compliance Management

Incident and Non-Compliance Management must occur on a regular basis. A Corrective Action Plan (CAP) creates a process for managing actual and potential non-conformity or non-compliance. Like the ISO Quality System, this process should take corrective and preventive actions to eliminate the cause of chemical non-conformances and any CMS-related issues or incidents, including spills, health and safety.

At minimum the organisations' CAP should:

- Be accompanied by a root cause analysis (RCA), to find out the cause of the non-conformity. Traceability supports the RCA
- Have corrective actions for the organisation in order to prevent such a non-conformity to happen again
- Be implemented and documented

8.3. General Maintenance and Housekeeping

Maintenance and housekeeping activities such as determining and recording which chemical containers and PPE are unlabeled, in poor condition, expired, or not essential should be conducted regularly.

At minimum an organisation should have;

- An SOP for maintenance activities
- Maintenance activities reviewed and the necessary steps should be taken which could be relabelling stock, removal of chemicals and adjusting purchase decisions.

9. Continuous Improvement

As changes happen in organisations, regulations, requirements and processes, an organisation's CMS needs consistent review and updates. It is important that the organisation has a process in place to do so. This process may be done internally and/or by external parties.

9.1. CMS Performance Review

Each part of the CMS needs to be reviewed to assess implementation, opportunity for improvement and if goals have been met. Such a review helps your organisation continuously update its strategies and priorities.

Minimum requirements for a review are:

- Assess conformity against standards. This may include reviewing the incident logs, RCAs & CAPs.
- Determine progress measured against goals
- Determine success of processes implemented and followed
- Establish required and relevant trainings such as via ZDHC Academy, all training should be documented
- Review and document reviews so they are readily available upon request, as this may be requested as evidence during an audit
- Summarise reviews and provide to the organisations leadership
- Complete review on a yearly basis, or document relevant frequency for your business depending on risk levels and historic performance

ZDHC encourages organisations to engage with external audits or certification schemes that are aligned with the ZDHC CMS, ZDHC Academy, ZDHC MRSL, and other guidelines.

After a performance review has been completed, the team should come up with actions to update and implement relevant changes to their CMS. These actions should be reviewed and lead to new targets that can enable continuous improvement.

9.2. Training

Training minimises and prevents accidents and environmental impact and should be provided to all relevant employees and suppliers to have a foundational knowledge regarding chemical management.

External experts such as ZDHC Approved Training Providers should conduct in-house training. At minimum the relevant employees shall be trained on:

- Purchasing Requirements as per the Purchasing Policy
- RSL/MRSL
- Use of Personal Protective Equipment (PPE)
- Emergency Procedures as per Standard Operating Procedure (SOP)
- Safety Data Sheets
- Safe storage and handling of chemicals
- Wastewater and sludge management
- Air Emission
- Waste and disposal

The training modules provided by the ZDHC Academy can be incorporated into the Training Calendar of employees, especially for the Chemical Management Team members. Records of training should be documented by the Personnel Department, along with Date of Training, Name of Trainer and Trainees and the Topic/Subject of the training provided.

Appendix A

A.1. ZDHC Tool Overview

Chapter	ZDHC Tool
2.3/ 9.1/ 9.2	ZDHC Academy
1.2.3	ZDHC ClearStream
1.2.1/ 5.1	ZDHC MRSL Conformance Guidance
1.2.3	ZDHC InCheck
3.2	ZDHC Gateway - Chemical Module
7.1	ZDHC Gateway - Wastewater Module
1.1/ 1.2.1/ 3.2/ 3.3 / 9.1	ZDHC Manufacturing Restricted Substances List (ZDHC MRSL)
1.2/ 7.1	ZDHC Wastewater Guidelines

A.2. Glossary

Audit: A formal inspection or review

Chemical Donation: When you give chemicals to another organisation or get any given chemicals from other organisations such as a sample.

Domestic Wastewater: Wastewater originating from plumbing fixtures and appliances that support human life such as sanitary systems (toilets), baths, and kitchens.

EMS Team: Emergency Medical Services, this is the team on stand by if any incident occurs in the organisation. Internal or External.

Ergonomic Assessment: Ergonomic assessments are an objective study of how employees work. The assessments help identify the ergonomic risks such as repetitive tasks that can cause strains, improper work area setup, and improper use of tools.

Exposure Control: Control measures that control one's exposure to hazardous substances

Exposure Prevention Plan: A plan that includes actions that need to be taken to prevent exposure of chemicals.

Facility: Manufacturing sites where materials are made or processed for products

Framework: A framework is a supporting structure.

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

Hazard Information: Hazard data of chemicals, includes physical, health, and environment concern

Hazardous waste: Waste that could cause harm to public health and/or the environment because of its chemical, physical, or biological characteristics (e.g., it is flammable, explosive, toxic, radioactive, or infectious). Hazardous wastes can be liquids, solids, or gases, or sludge.

Health & Safety: The principles to keep people safe in the organisation

Immediate Business Entity: A business entity is a legal organisation created to perform business activities. the immediate business entity means the legal entity that the organisation is part of.

Implementation Plan: Detailed list of activities, costs, expected difficulties, and schedules that are required to achieve the objectives of the strategy

Incident Management: The activities of an organisation to identify, analyse, and correct non-conformaties to prevent a future re-occurrence.

Industrial Hygiene Analysis: Industrial Hygiene & Site Assessments. Industrial hygienists conduct site assessments to evaluate potential exposures to chemical, biological, and physical hazards.

Industrial Wastewater: Water that has been used for manufacturing processes and no longer meets the quality standard for beneficial use. Where domestic wastewater is blended with industrial wastewater within the boundaries of a supplier that is the source of both wastewater types, the resultant flow is considered industrial wastewater

Long term Strategy: Long term Strategy is strategy meant for 5 years plus

Operating Unit: An operating unit has its own assets and liabilities and functions as if it were an independent company; the only difference is that it is owned by another company.

Regrettable Substitutions: Substituting a hazardous chemical with another of equal or greater hazards or concerns

RSL & PRSL: A list or lists with restrictions for both final product including fabrics, trims, etc and packaging.

Segregation: The isolation of chemical hazard classifications from others by preventing them from coming together.

Separation: The isolation of hazardous chemicals by physical separation using distance and physical barriers. Distance, partitions, cabinets, and containment devices are all acceptable measures to use.

SOP: Standard Operating Procedure

Stakeholder: A person or an organisation who are involved with the CMS strategy and therefore has responsibilities towards it and an interest in its success

Strategy: A plan of action designed to achieve a long-term or overall goals/objectives

Supply chain: System of activities, information and resources involved in moving a product or service from supplier to customer

For the full ZDHC Glossary, please go to URL.