Principles of Chemical Management in the Textile and Garments Industry in Bangladesh

Promotion of Sustainability in the Textile and Garment Industry in Asia - FABRIC

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

FABRIC Asia

Structure – Overall

Part 1	Part 2	Part 3
▪ Foreword ▪ Preface ▪ General provisions ▪ Objective ▪ Scope of the guideline ▪ Vision ▪ Mission/objective ▪ Definitions	**10 Technical Chapters Covering** 1. Good chemical management practices 2. Using reliable information sources on chemical substances and mixtures 3. Identifying and assessing chemical hazards and risks 4. Selecting and purchasing chemicals with consideration of sustainability aspects 5. Managing and controlling chemicals risks 6. Ensuring safe storage and transport of chemicals 7. Preparing and responding to chemical emergencies 8. Managing chemical waste and residues 9. Establishing chemical management system and organisational structure 10. Other (e.g. chemical security)	▪ Annexes ▪ Glossary/Index

9. Establishing chemical management system and organisational structure

9.1 Defining roles and responsibilities

9.2 Developing chemical policy and management system

9.3 Planning and implementing chemical improvement measures

9.4 Using a quality assurance programme and monitoring performance of chemical

9.5 Providing training on chemical management

9.6 Investigation and reporting of accidents, occupational diseases and other incidents

9.7 Auditing, monitoring and reporting on chemical management system performance

9. Establishing chemical management system and organisational structure

9.1 Defining roles and responsibilities

9.1.1 The size of a facility's workforce for the Chemical Management System (CMS) implementation shall take intial consideration of the size of the factory´s operations. It is recommended to have a chemical responsible person or team made up of qualified, competent, and experienced employees to oversee the implementation and monitoring of the chemical management system.

9.1.2 The employer shall provide the chemical responsible person or team with the mandate and authority to maintain the CMS within the factory's scope. For larger scale facilities with a greater scope, different departments or functions with complementary tasks and duties can assist the individual or the chemical team.

9.1.3 The chemical responsible person or team members shall possess the following skill sets:

(a) Understanding of chemical products as well as the manufacturing processes and applications.

(b) Thorough understanding of the Globally Harmonized System (GHS) of classification and labeling, or an analogous system, as well as local and international chemical restrictions regulations

(c) Reading and interpreting Safety Data Sheets (SDS)

(d) Competency in Restricted Substances Lists (RSL) criteria and Manufacturing Restricted Substances Lists (MRSL) conformities/non-conformities

(e) Computer skills, such as the ability to use online resources

(f) Expertise in conducting interactive training for internal staff

(g) Excellent interpersonal, analytical, data-gathering, and communication skills

9. Establishing chemical management system and organisational structure

9.1 Defining roles and responsibilities

9.1.4 All actions for implementation are overseen by the Chemical Responsible Person or Team. Supporting departments' functions and obligations and concerned personnel shall also be clearly defined.

- Chemical Responsible Person or Team
- Production department(s)
- Purchase/ Procurement department
- Chemical stores
- Quality Control/ Assurance Laboratories
- HR/Personnel/ Admin team
- ETP/ Waste Management Department

9.1.5 The job descriptions for the different positions within the factory shall clearly outline the assigned roles and responsibilities with regard to chemical management and maintenance of the chemical management system.

Department/ Staff Member	Responsibilities/Tasks in chemical management
Chemical Responsible Person or Team	• Overall responsibility to implement all actions on chemical management required under national and global laws • Document and understand all chemical conformance requirements (RSLs, MRSL, Safety Data Sheets (SDS), Technical Data Sheets, global & local legislation, eco-labels certifications and supplier declarations) • Conduct risk assessment of chemical inventory and plan precautionary actions for storage, handling and disposal for hazardous chemicals • Develop and maintain the Chemical Management Policy and Strategy documents • Screen & authorize new chemical product purchases after assessing them for MRSL and RSL risks prior to procurement and usage in bulk production • Maintain the foundational Chemical Inventory List (CIL) and ensure all data is up to date and complete at the Progressive and Aspirational levels, as applicable • Keep abreast of global regulations for chemical restrictions in end- and chemical products and ZDHC developments • Implement continuous improvement actions for CMS in line with the CMS Strategy • Conduct internal training of staff and workers on chemical management topics and safe usage of chemicals • Conduct regular internal audits and facilitate external audits (wherever required) for review and continuous improvement of CMS • Perform Root Cause Analysis (RCA) and prepare Corrective Action Plan (CAP) for non-conformities (for example RSL failures, non-conformity to the National Wastewater Guidelines and chemical-related accidents)

9. Establishing chemical management system and organisational structure

9.2 Developing chemical policy and management system

Linking chemical management with quality management system(s)

9.2.1 The following shall be included in a chemical management policy document:

(a) A Policy Statement endorsed by the factory's top management.

(b) Practices and procedures, which may include purchasing policy, transparency policy, and traceability policy, for fulfilling the policy statement's commitments.

9.2.2 The policy statement shall include a commitment to:

(a) Adopting and implementing national/global guidelines on reducing industry's chemical footprint.

(b) Incorporating sustainable chemical management practices in to production processes

(c) Continuous improvement in CMS effectiveness

(d) Ensuring the safe use of chemicals at your facility to secure Health & Safety of workers and to minimize environmental impact

(e) Anchoring traceability and transparency into the facility's operations

9.2.3 The chemical management policy statement shall be communicated to all stakeholders, including staff. The factory´s leadership shall sign and endorse the policy statement. It shall be reviewed periodically, reflecting internal and external changes.

9. Establishing chemical management system and organisational structure

9.2 Developing chemical policy and management system

9.2.4 The following needs to be ensured for writing policy:

(a) Commitment of the supplier's leadership

(c) Effective date and revision date

(d) Document control via reference numbers

(e) Person identified as responsible to maintain and review the policy

9.2.5 The chemical management policy statements are expected to cover several key statements and commitments:

9.2.6 The chemical management policy shall be communicated to the supplier's internal and external stakeholders…

9.2.7 Chemical products shall be obtained from a reliable source to prevent dangerous substances from entering a manufacturing plant in the first place, or at the very least reduce their presence ..

9.2.8 The factory shall have a transparency policy, which may include

(a) List of stakeholders that the company engages with

(b) Documents and information to be shared with stakeholders

(c) Frequency of sharing the documents and information

(d) Process of sharing

Scope	Example of policy statements
Compliance to local laws and regulations	"We will comply with all local regulatory requirements applicable to facility's manufacturing operations"
Minimize chemical risk to the separate environment and employee Health and Safety	"We will use safer and sustainable chemicals in our manufacturing processes to ensure protection of employees, communities, environment and consumer health"
Capacity building and training	''We will continuously update the knowledge and skills of the staff on chemical management via training''.

9. Establishing chemical management system and organisational structure

9.3 Planning and implementing chemical improvement measures

9.3.1 The implementation of chemical management policies shall be assessed by continuous monitoring.

9.3.2 In order to identify and address management system shortcomings that resulted in an incident a root-cause-analysis shall be performed. The scope of the work shall be clearly defined before commencing root-cause-analysis. The following are the steps that could be followed to perform a root-cause-analysis.

9.3.3. The first step in root-cause-analysis shall be the collection of documents relevant to the incident. The list of relevant documents will depend on the incident being investigated.

a) The list of conventional parameters of concern and the MRSL substances of concern

b) The Chemical Inventory List (CIL)

c) List of chemicals used in the ETP

d) ETP operational records including load calculations, input raw water characteristics etc.

9.3.4 Prior to the onsite visit, the documents shall be examined so that the visit can be more effective. The collected documents shall be reviewed thoroughly to find any probable irregularities or operational mistakes.

9.3.5 The team conducting the root-cause-analysis shall undertake an onsite review of the production line to determine whether the factory's information accurately reflects actual production. During the visit, onsite sampling shall be done if required for the incident being investigated.

9.3.6 The team shall interview the personnel working in the unit involved in the incident to better understand the process and check for non-conformities.

9. Establishing chemical management system and organisational structure

9.3 Planning and implementing chemical improvement measures

9.3.8 The samples collected during the onsite testing shall be tested in a recognized laboratory.

9.3.10 The root cause(s) identified shall be documented and a Corrective Action Plan (CAP) shall be devised and implemented to prevent any similar incidents from occurring in the future. The RCA and CAP shall be shared with the relevant management and employees

9.3.11 The corrective action may require substitution of a hazardous substance.

9.3.12 If the root-cause determined turns out to be an operational error, a standard operating procedure (SOP) shall be prepared to prevent future failures. The relevant personnel shall be trained on the new SOP.

9.3.13 After implementation of the corrective action, it shall be documented and records shall be kept at an online database.

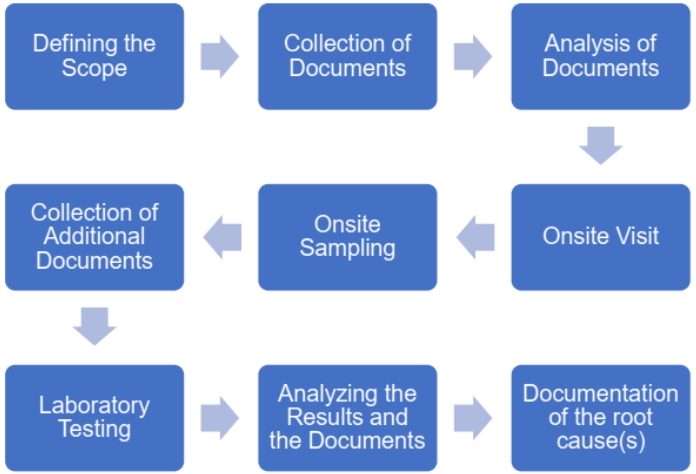

Figure 13: Typical steps involved in root-cause-analysis

9. Establishing chemical management system and organisational structure

9.4 Using a quality assurance programme and monitoring performance of chemical

9.4.1 The role of quality assurance (QA) in the chemical plant shall be clearly defined in management documents, as well as who is responsible for each area and activity.

9.4.2 The documentation shall also specify which records of routine operations, such as equipment calibration and maintenance, shall be collected, ensuring that a logical and consistent record-keeping system is implemented.

9.4.3 A quality assurance officer/team shall be appointed to liaise with management, manage data archives, conduct regular audits and reviews of the QA system, and report on any QA issues to the top management.

9.4.4 All staff shall be adequately trained for the task they have to perform. Training must be documented so that the management can verify that employees are capable of doing the tasks assigned to them.

9.4.5 To ensure that staff skills and training are matched to procedural needs, the level of training necessary for each operation shall be explicitly established…

9.4.6 Standard Operating Procedures (SOPs) shall be prepared which will describe sampling, transportation, analysis, use of equipment, quality control, calibration, production of reports, etc….

9.4.7 An SOP shall convey the procedure in such a way that any potential variances in interpretation are avoided, hence avoiding subtle modifications in the procedures or equipment employed. A standard operating procedure (SOP) shall be precise, succinct, and contain all necessary information to carry out the procedure it outlines.

9.4.8 Because the SOP is the laboratory's reference for a specific technique, it must be reviewed and updated regularly. SOPs shall be issued and made available with care to guarantee that they are only utilized by adequately trained personnel and that out-of-date copies do not remain in circulation.

9. Establishing chemical management system and organisational structure

9.4 Using a quality assurance programme and monitoring performance of chemical

9.4.9 It shall be ensured that the resources required for regular factory work and additional quality assurance workload are sufficient for the volume of work to be done…

9.4.10 All equipment must be maintained on a regular basis in accordance with the laboratory's defined criteria and generally accepted codes of practice. …

9.4.11 Equipment must also be checked regularly for reliability. This includes checking the calibration of all essential equipment. All equipment shall have calibration and maintenance records kept so that the repair status of each piece of gear can be tracked.

9.4.12 The sampling procedures shall be meticulously documented. Particular attention shall be paid to the precautions to be taken during sampling as well as the sampling strategies to be used.

9.4.13 The following methods can be used to ensure the quality of sampling:

(a) Strict adherence to sampling standard operating procedures.

(b) Ensure that all equipment is clean and functional.

(c) Keeping a record of all conditions that occurred during sampling.

(d) Taking all necessary procedures to prevent contamination

9.4.14 It shall be ensured that the passage of a sample through the quality assurance systems is fully documented and corresponds to the practices laid down in the relevant SOPs.

9. Establishing chemical management system and organisational structure

9.5 Providing training on chemical management

Establishment of training plan on chemical management and training topics by factory-internal target groups

9.5.1 The employer shall identify the factory internal training needs based on the competencies required for fulfilling the assigned chemical management related roles and responsibilities in the chemical management system.

9.5.2 These training needs shall then be transferred into corresponding chemical management training activities and incorporated into the factory´s annual training plan.

9.5.3 The training should ensure that workers understand the hazards associated with chemicals used at their workplace and know the safe practices for handling and disposal of chemical products.

9.5.4 Among other topics, the training should cover following:

- How to read container labels as well as identify relevant chemical information in safety data sheets
- Proper and effective application of control measures, especially engineering control measures
- Proper use of PPE) and personal hygiene measures.
- First-aid measures in case of chemical incidence/accidents (e.g. use of emergency showers, eye wash stations)
- Emergency response measures in case of fire and chemical spills. Emergency response drills to spillages and leakages of chemicals and fire-fighting drills shall be conducted as per Standard Operating Procedure (SOP).

9.5.5 Workers shall undergo training on chemical management topics as part of the induction training as well as regular refresher training.

…

9. Establishing chemical management system and organisational structure

9.5 Providing training on chemical management

Monitoring training implementation and assessing training impact

9.5.15 The personnel/HR department or other department in charge of training shall keep records of the training offered and conducted. Training records shall include the date of the training, the name of the trainer and trainees, and the topic/subject of the training.

9.5.16 In addition to formal training events, physical mock-drills of first-Aid, fire-fighting and emergency response measures shall be recorded as well.

9.5.17 The extent of the training and instruction received and required shall be reviewed and updated simultaneously with the review of the working systems and practices.

9.5.18 Examining the following items shall be part of the review:

(a) whether personnel are aware of when protective equipment is needed and its limitations

(b) whether staff are aware of how to make the best use of the engineering control methods available

(c) if staff are familiar with procedures in the event of a hazardous chemical emergency

(d) procedures for information sharing between shift workers

Template 3: Training Record

Factory Name:

Location:

Updated by: **Date:**

Training Title	Date of training	Training Duration	Trainer Name	Training Provider Organization, address and contact	Location of Training	No. of Participants	Trainees' Assessment (Yes/No)

Template 4: Training Participants' Record

Factory Name:

Training Title:

Date: **Duration:**

No. of Participants: **Location:**

Trainer Name & Designation:

Participant's Name	ID Card No.	Designation	Department	Years in the Factory	Signature

9. Establishing chemical management system and organisational structure

9.5 Providing training on chemical management

Monitoring training implementation and assessing training impact

9.5.15 The personnel/HR department or other department in charge of training shall keep records of the training offered and conducted. Training records shall include the date of the training, the name of the trainer and trainees, and the topic/subject of the training.

9.5.16 In addition to formal training events, physical mock-drills of first-Aid, fire-fighting and emergency response measures shall be recorded as well.

9.5.17 The extent of the training and instruction received and required shall be reviewed and updated simultaneously with the review of the working systems and practices.

9.5.18 Examining the following items shall be part of the review:

a. whether personnel are aware of when protective equipment is needed and its limitations
b. whether staff are aware of how to make the best use of the engineering control methods available
c. if staff are familiar with procedures in the event of a hazardous chemical emergency
d. procedures for information sharing between shift workers

9. Establishing chemical management system and organisational structure

9.6 Investigation and reporting of accidents, occupational diseases and other incidents

9.6.1 In order to assess the risks and take any necessary remedial action, the Chemical Responsible Person or Team shall investigate the following immediately, in collaboration with workers and their representatives:

(a) accidents and other incidents, whether or not they result in bodily injury;

(b) suspected and verified cases of occupational disease;

(c) situations in which workers have removed themselves from danger;

(d) any other scenario in which hazardous chemicals may pose an unacceptable risk.

9.6.2 The investigation team shall perform a root-cause-analysis and plan corrective actions based on the root cause identified.

9.6.3 A standard operating procedure (SOP) shall be prepared to prevent the same failure in the future.

9.6.4 A review of the existing control mechanisms shall be part of the investigation

9. Establishing chemical management system and organisational structure

9.6 Investigation and reporting of accidents, occupational diseases and other incidents

Reporting of accidents, occupational diseases and other incidents

9.6.5 All accidents, occupational illness, and other incidents involving hazardous chemicals shall be reported to the appropriate authority.

9.6.6 Examples of reporting requirements in the case of occurrences that result in damage or illness include:

(a) periods of absence from work specified by the competent authority;

(b) a work-related injury or illness requiring medical care, or loss of consciousness, caused by the inhalation, ingestion, or skin absorption of any chemicals;

(c) any other work-related injury or sickness that requires the injured or sick individual to be admitted to the hospital and held there for longer than the period specified by the competent authority as reportable.

9.6.7 The competent authority may designate and periodically assess which diseases are prescribed as being of occupational origin and which require reporting.

9.6.8 Other types of incidents that shall be reported include:

(a) an explosion or fire resulting in the suspension of normal operations or the shut-down of a facility, which may be prescribed by the competent authority, where the fire or explosion was caused by the ignition of a hazardous chemical, including by-products, intermediates, and waste products.

(b) the sudden, uncontrolled release of a certain quantity of hazardous chemicals from a plant or during transportation, including site and cross-country pipelines, as prescribed by the competent authority by the competent authority

(c) a fire caused by a hazardous chemical while being transported

Template 5: Health Check-up Record Template

Factory Name:

Location:

No. of person checked-up: **Total Clinically fit:** **Total Clinically unfit:**

Updated by: **Date:**

Date	Name of Employee	Department	Designation	Attended physicians (Name, Designation, Contact)	Check-up description (Tests performed, diagnosis, etc)	Result summary (Test results, disease diagnosed)	Clinical fitness (Fit/Unfit)	Actions for remedy	Physician's signature	Physician's remarks

Template 6: Chemical Accident and Incident Log Book

Description of the accident/incident

Sl	Victim's info		Accident/ Incident info		Accident/Incident detail			Treatment info	
	Name		Date		Severity (tick)	Affected organ of victim person	Death (Yes/No)	Hospital/ Clinic where treatment taken place	Doctor/Assistant conducting the treatment
	ID		Time		high				
	Section		Location		medium				
	Designation				low				
	How much percentage of earning capability worker has lost due to the accident/incident								
	Date of return to the workplace								
	How much time/day worker had to be absent due to the accident/incident								
	Compensation that has been given from company								

9. Establishing chemical management system and organisational structure

9.7 Auditing, monitoring and reporting on chemical management system performance

9.7.1 The CMS performance review can be accomplished by implementing an internal audit process that takes into account the following factors:

(a) Individuals/departments involved in the audit process

(b) Qualification of CMS auditor(s)

(c) Frequency of internal audits

(d) Documentation of audit results and corrective actions

(e) Possible links with other audit programs (for example quality, EMS or Health & Safety management system audits)

(f) Training required for CMS auditor(s)

(g) Communication of audit results with facility leadership

9. Establishing chemical management system and organisational structure

9.7 Auditing, monitoring and reporting on chemical management system performance

9.7.2 The internal audit process can be set up as per the below suggested flow of activities:

(a) Setting up a team of qualified person(s) to perform internal audit

(b) Defining audit scope, key performance indicators, criteria and objectives

(c) Creating an audit plan (time, location, duration, audit methods and follow-up actions)

(d) Creating an audit checklist based and goals to be checked and areas to be assessed

(e) Recording the audit evidence (photos, document checks, interviews, forms, samples)

(f) Documenting audit results and prepare CAP with timeline and affixing responsibilities

(g) Communicating audit results to the management through Management Review Meetings

(h) Implementing the action plan to achieve improvements outlined in CAP

(i) Communicating the audit report and actions taken to internal stakeholders

(j) Documenting all audit records results and corrective actions take

9. Establishing chemical management system and organisational structure

9.7 Auditing, monitoring and reporting on chemical management system performance

External Audits

9.7.3 An audit by an external qualified agency that is aligned with the appropriate National authority accepted experts shall also be used to conduct the CMS Performance Review. An external audit can be performed once a year, and the conclusions shall be corroborated by the results of the internal audit.

Review of chemical management system and performance

9.7.4 All internal/external audits shall result in the identification of areas for improvement and a Corrective Plan of Action (CAP). These shall be reviewed by the supplier's leadership during a Management Review Meeting (MRM), during which the internal audit team or Chemical Responsible Team can present the audit results and recommendations on corrective action shall be made.

9.7.5 The following are some suggested agenda items for MRMs:

(a) The status of prior MRM follow-up actions
(b) CMS' overall progress toward defined targets (as outlined in the CMS Strategy document)
(c) Decisions required from leadership for financial investments or personnel requirements for CAP
(d) Internal/external audit reports, including findings and Corrective Action Plan (CAP), including resource requirements and dates
(e) Incidents of chemical emergencies, spills, etc.
(f) Status of current compliance with legal and other requirements
(g) Any changes that could impact the CMS, such as change in chemicals or employees
(h) Any other topic relevant to CMS

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Registered offices
Bonn and Eschborn

Employment Injury Protection Scheme for Workers in the Textile and Leather Industries (EIPS)
GIZ Bangladesh
PO Box 6091, Gulshan 1
Dhaka 1212, Bangladesh
T +880 2 5506 8744-52, +880 9666 701 000
F +880 2 5506 8753
E giz-Bangladesh@giz.de
I www.giz.de/bangladesh

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH