Capacity Development on Chemical Management Training Programme for Multipliers

FABRIC Pakistan –Interim workshop 1 (T3)

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

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

FABRIC Asia

giz

Training programme for chemical management multipliers

Agenda of Interim Workshop 1 (T3)

9th July 2021, **Time:** 10:00 AM - 12:00 AM

Time	Agenda	Facilitation by
10:00 AM - 10:05 AM	Welcome • Agenda of the day • Purpose	Arjmand
10:05 AM - 10:40 AM	Feedback on use of REMC materials (self-learning materials, toolkit) • Technical issues encountered • Content issues encountered • Reflect on exercises • Explain additional content of REMC toolkit (e.g. course outlines, exercises)	Benjamin/Jürgen
10:40 AM - 11:00 AM	Introduction to advanced features of atingi and the CM course • How to track progress of learners • How to tailor the course	Benjamin
05 Min Break		
11:05 AM - 11:25 AM	Using FABRIC e-REMC materials • Introduction to CM self-learning trainer guidelines • Overview and link of e-REMC materials • How to link materials for a blended factory initiative (example)	Jürgen
11:25 AM – 11:55 AM	Walkthrough Module 07 – 11	Arjmand
11:55 AM - 12:00 Am	Next steps	Arjmand

Training programme for chemical management multipliers

Purpose of today`s session

1. To reflect on experiences in using the self-learning materials
2. To reflect and clarify on structure and content issues of available reference materials
3. To explore about possible ways of integrating the CM self-learning

Feedback on use of REMC materials

Feedback on use of REMC materials

1. General experience as user of the self-learning materials
2. Technical issues encountered
3. Content related issues requring clarification

Feedback on use of REMC materials

Miro Board

1. General experience as user of the self-learning materials
2. Technical issues encountered
3. Content related issues requring clarification

Using the GIZ atingi learning platform

Using the GIZ atingi learning platform

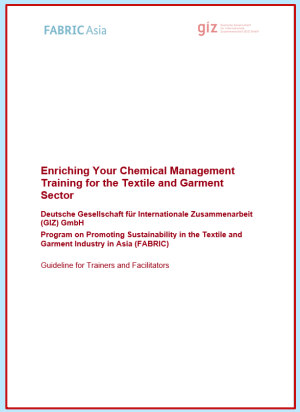
1. How to submit Quiz (and check whether it is successfully submitted or not)
2. About trying Quiz Again (and successful submission) Demo
3. Insights into descriptive Q&A in the quizzes Demo
4. How to submit Assignment (And check whether it is submitted or not) Demo
5. Insight into progress gauge showing % Demo
6. How to use forum for posting questions
7. How to flag something through announcement section Demo

Using FABRIC e-REMC materials

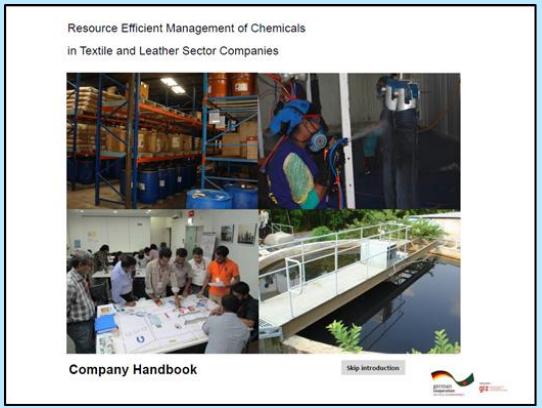
Using FABRIC e-REMC materials

Overview of e-REMC

REMC Self-learning course (2021)



REMC Toolkit (2017), DSHC Materials, 2021



Self-learning materials
Training management platform

Handout for factory teams

Session plans (face-to-face, virtual workshops)
Sample presentations
Exercises (handout, worksheets, solution)

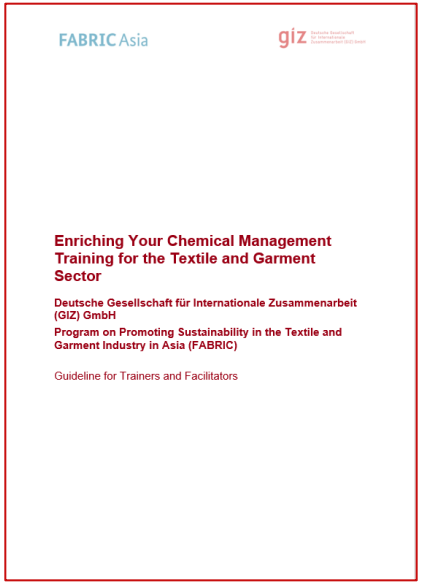
Using FABRIC e-REMC materials

Internal structure of e-REMC materials

- Main factory team reference
- Templates
- Reading references

- Session plans
- Presentations
- Exercises incl. handouts
- Worksheets
- Templates
- Reading references

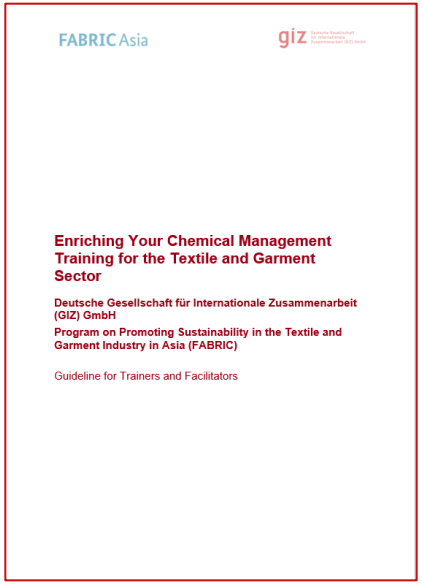
Using FABRIC e-REMC materials



For your reference as trainers => CM self-learning trainer guideline:

- Guidance on how to link the CM self-learning materials with training initiatives
- Content and structure of the CM self-learning materials
- Guidance on how to use the learning platform
- Useful links and references
- Sample schedule and timeline for blended factory improvement program (FIP)

Using FABRIC e-REMC materials



Guidance on how to link the CM self-learning materials with blended learning or factory improvement program (FIP)

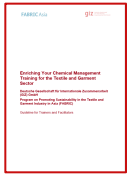
Option 1 – Stand-alone self-learning

Option 2 – Integration into a blended learning approach

Option 3 – Using materials in a face-to-face workshop

Option 4 - Supplementing academic learning programs

Using FABRIC e-REMC materials



e-REMC materials and blended learning/factory improvement program (FIP)

Organisation & Assessment

1. **Orientation Visit** *(1 day per factory)*
   - Orientation visit to (each) factory by REMC expert
2. **Self-Assessment** *(3-5 weeks)*
   - Formation of a change management (CM) team in (each) factory
   - CM teams conduct a self-assessment of their respective factories.

   The REMC expert evaluates this study
8. **Documentation Visit** *(1-2 days per factory)*
   - The REMC expert evaluates achieved improvements and analysed the need for additional measures.
   - Optional: Ongoing implementation *support by the REMC expert*

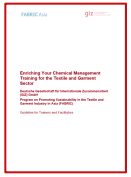
Workshop & Seminars

3. **Chemical Management System Workshop** *(3 days)*
   - Introduction to CM & ZDHC/Detox
   - Overview over chemical management system (CMS)
   - Requirements, implementing tools and next steps will be presented.
5. **Change Management & Risk Control Management Workshop** *(3 days)*
   - Combining various methods and technical contents (e.g. control of chemical risks, good work practices)
7. **Additional Seminars on Need- Basis**
   - Customised learning support throughout implementation phase II
   - Specific technical topics (e.g. PPE selection, substitution of chemicals etc.)

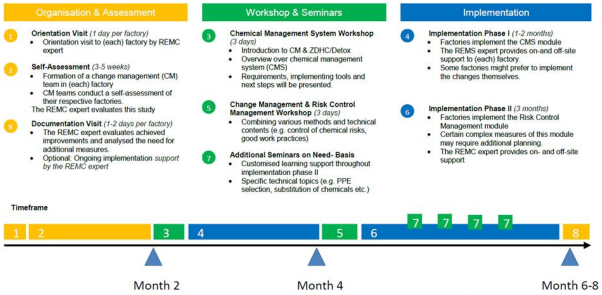
Implementation

4. **Implementation Phase I** *(1-2 months)*
   - Factories implement the CMS module
   - The REMS expert provides on-and off-site support to (each) factory.
   - Some factories might prefer to implement the changes themselves.
6. **Implementation Phase II** *(3 months)*
   - Factories implement the Risk Control Management module
   - Certain complex measures of this module may require additional planning.
   - The REMC expert provides on- and off-site support

Using FABRIC e-REMC materials

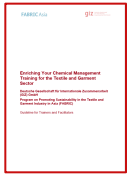


e-REMC materials and blended learning/factory improvement program (FIP)



Self-learning module	Use in FIP step
Module 1: Introduction to chemical management	1, 3, 4
Module 2: Mapping of chemicals and chemical flows	2, 3, 4
Module 3: Using chemical information sources and ensuring traceability	3, 4
Module 4: Assessing chemical hazards, exposure and risks	3, 4
Module 5: Identifying and documenting priority chemicals	3, 4
Module 6: Streamlining chemical purchasing practices	3, 4
Module 7: Preparing for chemical risk management	3, 4
Module 8: Controlling chemical hazards and risks	5, 6, 7
Module 9: Managing chemical wastewater and waste	5, 6, 7
Module 10: Streamlining chemical management system and organization	3, 4, 5, 6, 7
Module 11: Monitoring and reporting chemical management performance	3, 4, 5, 6

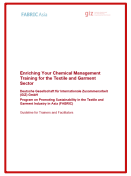
Using FABRIC e-REMC materials

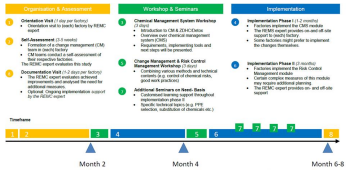


e-REMC materials and blended learning/factory improvement program (FIP)

Module 2: Mapping of chemicals and chemical flows		
Description	**Module content**	**Learning materials**
Learning Units 2.1 and 2.2. guide leaners in systematically identifying and documenting chemicals present and used in the factory. Learning Unit 2.1 focuses on two different methods and tools for attaining a basic understanding of the situation at hand. Learning Unit 2.2 deals with the preparation measures required for conducting a chemical inventory in line with common expectations in international supply chains.	Learning Unit 2.1 • Using eco-mapping for visualizing chemical usage and hotspots • Mapping process flows using process flow charts Learning Unit 2.2 • Content and formats of chemical inventories • Inventory requirements in international supply chains • Preparing a chemical inventory	Learning Unit 2.1 • Presentation of LU 2.1 with 22 slides and 9 pages of voiceover (20 min.) • Quiz 2.1 (5 min.) Learning Unit 2.2 • Presentation of LU 2.2 with 16 slides (15 min.) • Quiz 2.2 (5 min.) • Assignment (45 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 90 min. • Learning Unit 2.1: 25 min. • Learning Unit 2.2: 20 min. • Module assignment: 45 min.	Learning Unit 2.1 • Prepare an eco-map for selected chemicals or a production step involving chemicals. Learning Unit 2.2 • Review existing chemical inventory approaches. • Prepare/Enhance a chemical inventory format. • Collect and fill in information in accord with an enhanced chemical inventory format. • Prepare a (chemical) waste inventory.	Learning unit 2.1 • REMC Trainer guideline LU 1200, SP 1201 • DSHC Module 9_ Process and Chemical Flows, submodule Learning unit 2.2 • REMC Trainer guideline LU 1200, SP 1201 • DSHC Module 2_Chemical Management Framework, Chemical Inventory, submodule 2.2

Using FABRIC e-REMC materials

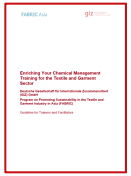


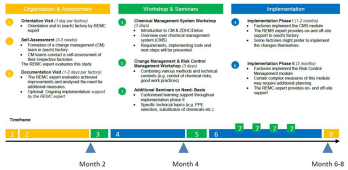


Factory improvement program (FIP) - Example

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
1.	Getting started	• Familiarize yourself with the factory (through a background research and orientation visit). • Establish a working relationship with the factory management. • Obtain management commitment.	1	Module 1 as orientation of top management	*Alternatively: Module 1 as orientation of top management*	Meeting with top-management and possible change management team members	
2.	Self-assessment (baseline)	• Ensure availability of the focal point/team (e.g. change management team CMT). • Raise the change readiness of the factory staff. • Develop a preliminary understanding of the factory's needs and priority areas.	1	Module 1 as orientation of CMT members	*Alternatively: Module 1 as orientation of CMT members*	Factory visit for REMC Quick-check with CMT	SAC Higg FEM 3.0 - Chapter 7 – self assessment (base line)

Using FABRIC e-REMC materials

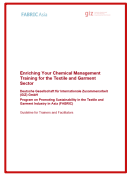


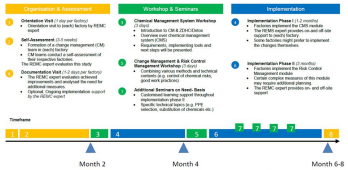


Factory improvement program (FIP) - Example

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
3.	Chemical Management System (CMS) Workshop	• Develop competence of factory personnel (e.g. Change Management Team) on CMS elements and understanding the situation. • Support CMT in assessing, prioritizing and documenting the situation at hand. • Support CMT in the preparation of the first factory action plan with focus on CMS.	1-2	Modules (and learning units) 2–6 for self-learning training by CMT members	Several small workshops or one large workshop to reflect on the content of self-learning and complete the table-top assignments	Pilot approaches for the following: (i) documenting process flows and production layout (ii) mapping which chemicals are in use and where (iii) identifying "hotspots" (iv) classifying chemicals by hazards and hazard bands (v) assessing risks (vi) preparing sample procedures	Eco-mapping Process-flow charts Inventory table Safety-data-sheet check

Using FABRIC e-REMC materials

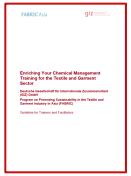


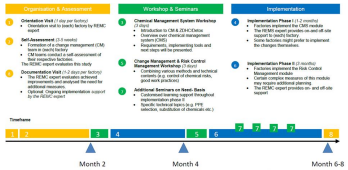


Factory improvement program (FIP) - Example

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
4.	Implementation phase I	• Support CMT in establishing/ improving basic CMS elements in line with the factory action plan	3-4	Modules (and learning units) 1 – 6 for self-learning training by other selected factory personnel	Virtual progress review meetings Support CMT in reflecting on self-learning with factory personnel	On-site progress review meetings Support CMT in reflecting on completing assignments with factory personnel to support adoption of procedures and practices	
5.	Change & Risk Management Workshop	• Develop competence of CMT and factory personnel on risk control measures • Support CMT in updating factory action plan with focus on further CMS elements and risk control measures	4-5	Modules (and learning units) 7 - 10 for self-learning training by CMT members	Several small workshops or one large workshop to reflect on content of self-learning and complete table-top assignments Review meeting with top-management to sustain commitment	Support assessment of risk control gaps and planning of improvement measures	Root cause analysis Check-list tools Safety data sheets

Using FABRIC e-REMC materials

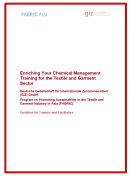


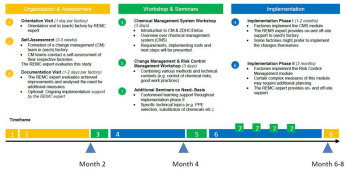


Factory improvement program (FIP) - Example

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
6.	Implementation phase II	• Support company in implementing control measures and anchoring CMS elements	6-8	Modules (and learning units) 7-9 for self-learning training by other selected factory personnel	Virtual review meetings Support CMT in reflecting on self-learning with factory personnel Establish a factory CM training plan Prepare a factory CM handbook	On-site review meetings Support CMT in reflecting on completing assignments with factory personnel to support implementation of improvement measures	
7.	Additional technical seminars	• Provide additional inputs on technical issues (e.g. selection of PPE, storage of chemicals, substitution)	6-8	Modules 10 and 11 for CMTs, top management and selected factory personnel	Workshop with top management and management system team on Module 11 Additional training measures for selected target groups (e.g. ETP staff, waste handlers/contractors)	Action planning with top management and management system team for anchoring	UBA BAT checklist tool

Using FABRIC e-REMC materials

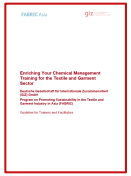


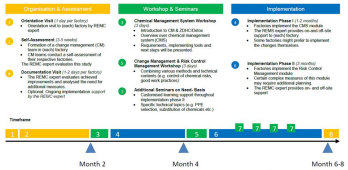


Option 2 – Integration into a blended learning approach

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
6.	Implementation phase II	• Support company in implementing control measures and anchoring CMS elements	6-8	Modules (and learning units) 7-9 for self-learning training by other selected factory personnel	Virtual review meetings Support CMT in reflecting on self-learning with factory personnel Establish a factory CM training plan Prepare a factory CM handbook	On-site review meetings Support CMT in reflecting on completing assignments with factory personnel to support implementation of improvement measures	
7.	Additional technical seminars	• Provide additional inputs on technical issues (e.g. selection of PPE, storage of chemicals, substitution)	6-8	Modules 10 and 11 for CMTs, top management and selected factory personnel	Workshop with top management and management system team on Module 11 Additional training measures for selected target groups (e.g. ETP staff, waste handlers/contractors)	Action planning with top management and management system team for anchoring	UBA BAT checklist tool

Using FABRIC e-REMC materials





Factory improvement program (FIP) - Example

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
8.	Final/Progress review and documentation	• Document and review progress. • Support top management and CMT in planning and implementing next steps.	8-9		Closing a meeting with a CMT team to review progress and plan the next steps	Pilot planning and implementation of internal audits and on-site inspections Closing a meeting with top management	SAC Higg FEM 3.0 – Chapter 7 (self-assessment progress)

Next steps

Training programme for chemical management multipliers

Walkthrough Module 07 – 11

7

Module 7: Preparing for chemical risk management

8

Module 08: Controlling chemical hazards and risks

9

Module 09: Managing chemical wastewater and waste

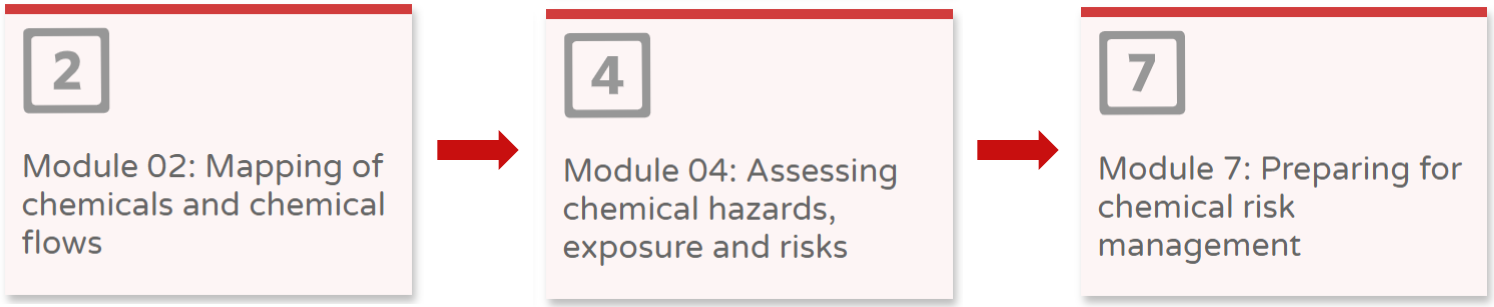
10

Module 10: Streamlining chemical management system and organization

11

Module 11: CM performance monitoring and reporting

Module 07



Assignment CM 7:
Analysing **gaps**, **Root Causes** and **Preparing Action Plan**

Assignment CM 7

Situation

Beautiful Colours, a tier 2 factory, has an All over Printing (AOP) floor. When you went to visit their weighing room, you saw dyestuff dust all over the floor. One of your many observations is that the person responsible for weighing carries dyestuff in spoon from boxes kept further away from the weighing balance. You also saw no exhaust ventilator in the weighing room.

For the company, you have to do the following tasks:

- **Figure out the possible root causes**

- **Beautiful Colours**, a tier 2 factory, has an All over Printing (AOP) floor. When you went to visit their weighing room, you **saw dyestuff dust all over the floor**. One of your many observations is that the person responsible for weighing **carries dyestuff in spoon** from **boxes kept further away from the weighing balance**. You also saw **no exhaust ventilator** in the weighing room.

- **Prepare an action plan (SMART) / Trackable**
  - **What**
  - **How**
  - **Who**
  - **When**

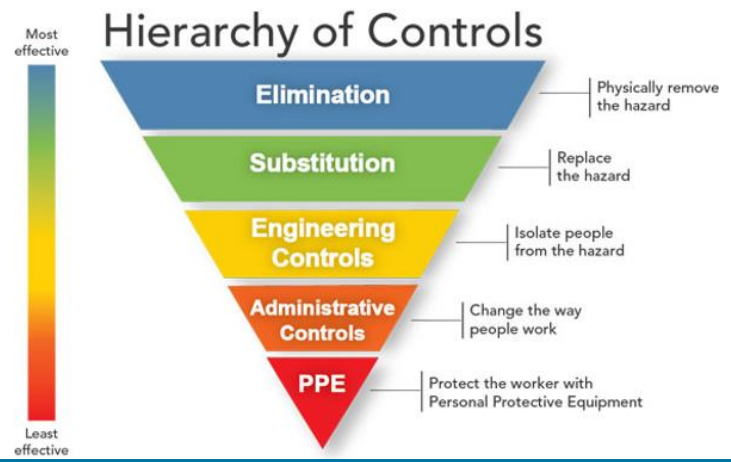
Module 08

7

Module 7: Preparing for chemical risk management

8

Module 08: Controlling chemical hazards and risks



Assignment 8.2: PPE Selection Exercise

- Workers are spraying denim with **Potassium permanganate**. The concentrations of the spray ranges from **5g/L to 12g/L**.
- Workers are engaged in **10-hour shifts in the spraying area**, working for about six to eight hours a day, with a one-hour lunch break and 15-minute coffee/tea breaks in the morning and afternoon, **spending the rest of the time waiting for materials to be moved in and out of the spraying area**.
- **Most workers remain in the work area during the coffee/tea breaks.**
- An air quality measurement indicates that the average concentration is about **0.4 mg/m3** time weighted average or TWA, with peaks of upto **0.8mg/m3** in the work area and **1.5 mg/m3 at the point of the spraying operation**.
- As per the safety data sheets (SDS), the **TWA OEL is 0.2 mg/m3**.
- The spray areas are **equipped with a water curtain system**; however, these **are not switched on**.
- The work area has **four wall mounted extraction fans** mounted which are located above the spraying booth. **Only one of the wall mounted fans is in operation** and **blows the exhaust air towards the neighbouring garment unit.**
- The workers in the area wear surgical masks which look new and fairly clean at the time of your visit.

Assignment 8.2: PPE Selection Exercise

- Hazards associated with chemicals in use or present in the Situation
- Possible Hazards and Risks in the Situation
- Who is at Risk?
- What are the effect / consequences?
- Control gaps ?
- Poor Practices?
- Recommended control measure as per control hierarchy

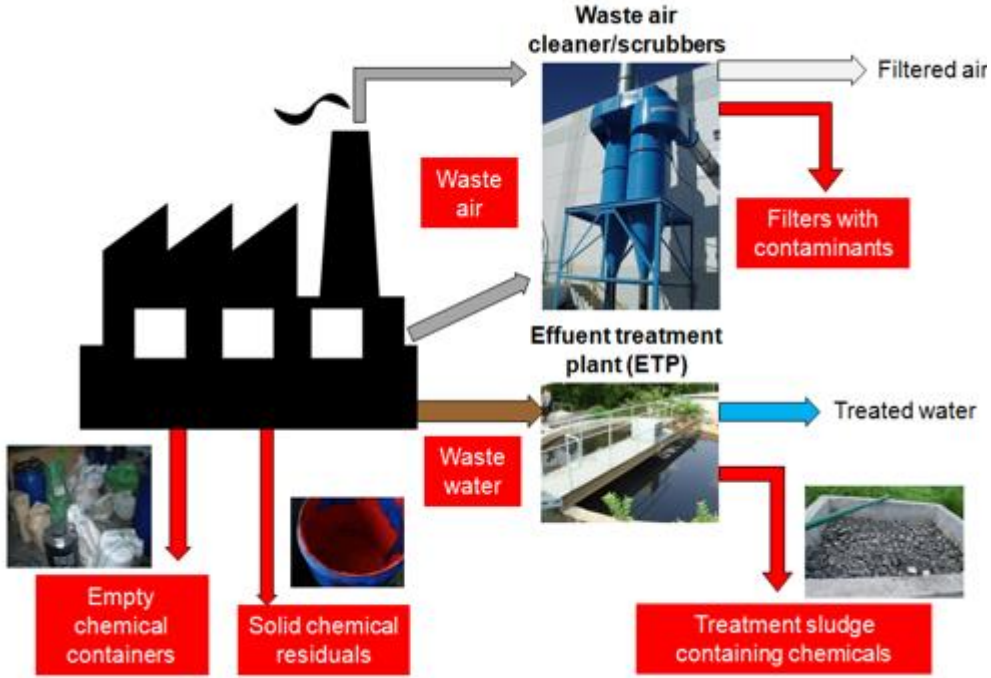
Assignment 8.3: Storage Conditions

- Identify all the Issues with Chemicals
  - Practices
  - Conditions
- Corrective Actions
  - Assessment
  - Action Plan

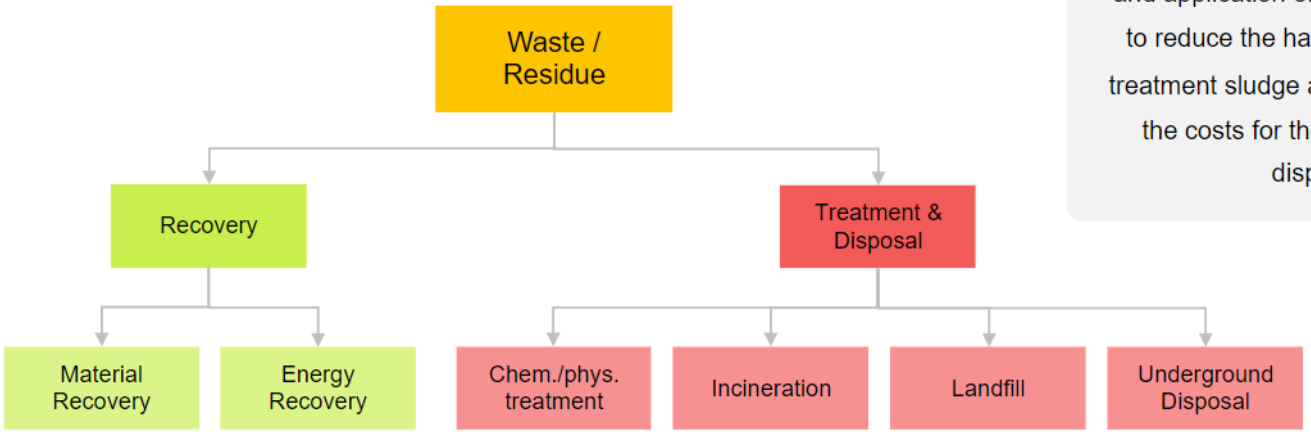
Module 9

9

Module 09: Managing chemical wastewater and waste



Module 9: Management of Chemical Waste



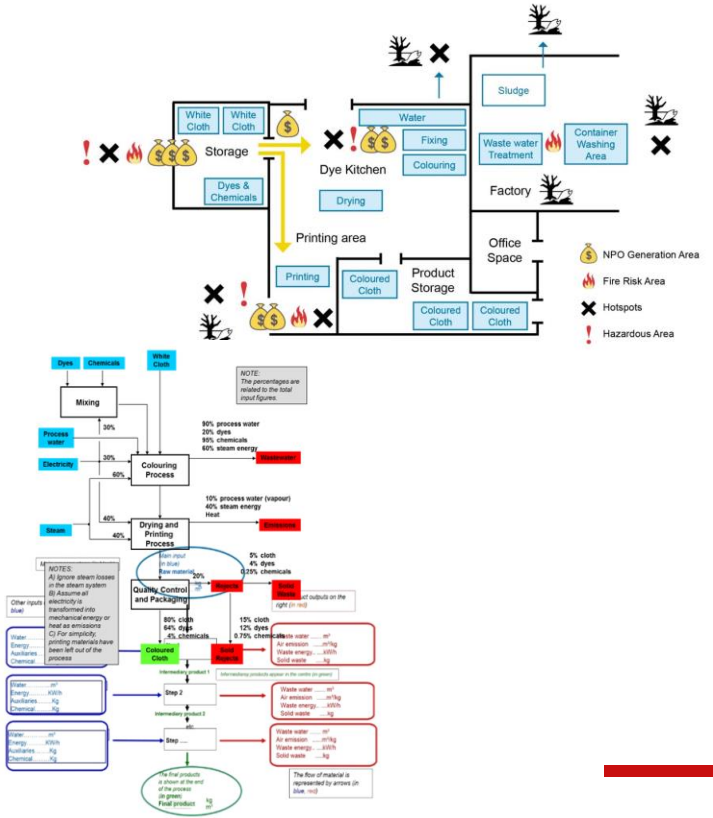
Source: UNIDO

Substitution of hazardous chemicals and application of BATs will help you to reduce the hazard levels of your treatment sludge and waste, reducing the costs for their treatment and disposal.

Assignment 9.1: Process flow and NPO Exercise

Extension to Assignment 02

- Beautiful Color Company Detailed Walkthrough
- Map location of chemicals and their flow
- Map chemical waste generated / present
- Identify NPOs and Chemical Hotspots
- Document Process Flow
- Prioritization on the basis of hazard associated
- Map internal key stakeholders
- Develop Change Management Team and Assign Roles
- Present Findings to Top Management



Assignment 9.3: Load Factor Calculation

Situation

- A batch of 800kg polyester knitwear shall be dyed with three disperse dyestuffs to achieve a shade of 3 weight-% dyes in an exhaust dyeing machine at a liquor ratio of 4:1.
- The average COD concentration of the dyestuffs is 1,450mg/kg. It is assumed that the dyes and the dispersing agents have the same specific COD value.
- The composition of the dyestuffs consists of 50% dyes and 50% dispersing agents.
- The exhaustion rates for the dyestuffs is 90%.
- Calculate the COD concentration of the exhausted dyebath in mg/l.
    i. Determine the quantity of dye and dispersing agent consumed
    ii. Calculate the COD load
    iii. Calculate the COD concentration

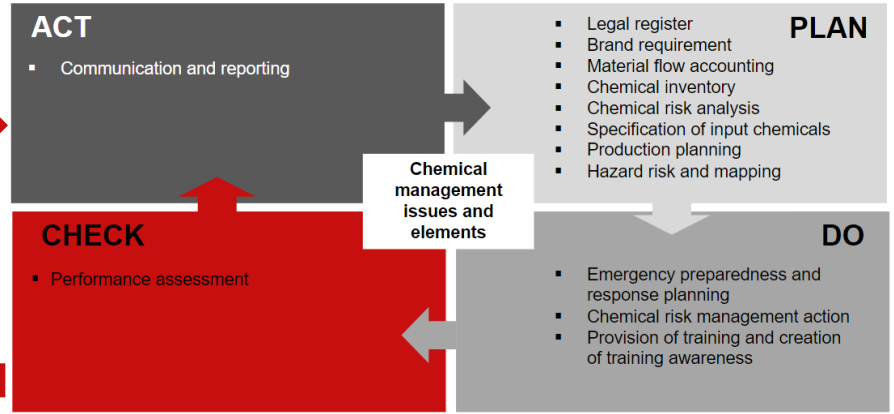
Module 10 – 11

10

Module 10: Streamlining chemical management system and organization

11

Module 11: CM performance monitoring and reporting



Training programme for chemical management multipliers

Question and answers

Training programme for chemical management multipliers

Next steps

#	Activity	Deadline
5	Complete CM self-learning course Segment II (Module 07 – 11)	19.07.2021
6	Reflection workshop	27.07.2021
7	Chemical Management and ZDHC Requirements	28.07.2021 – 29.07.2021
8	One 1-day workshop on didactical and facilitation skills	05.08.2021

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