

Cleaner Textile Wet Processing with Sustainable Chemical Management

SDC Seminar on December 1st, 2017

PRESENTED BY

MS. KIT LI

PROJECT MANAGER, CLOTHING INDUSTRY TRAINING AUTHORITY (CITA)

Accidents caused by Ineffective Chemical Management

- ▶ A massive chemical plant blast rocked Tongling in central Anhui province on Wednesday night, injuring at least two people, state media reported.



Thailand chemical accident in Bangkok bank kills eight

14 March 2016 | Asia

f t w e Share



Another seven people were injured in the accident

Eight people have died in a chemical accident in the basement of a Bangkok bank, officials have confirmed.

Japan: Fatal blast at Mitsubishi Materials factory kills 5

9 January 2014 17:17 252

Поделиться: f t w e



TOKYO. January 9. KAZINFORM - At least five people have been killed and 12 injured in an explosion at a chemical factory in central Japan, BBC informs.

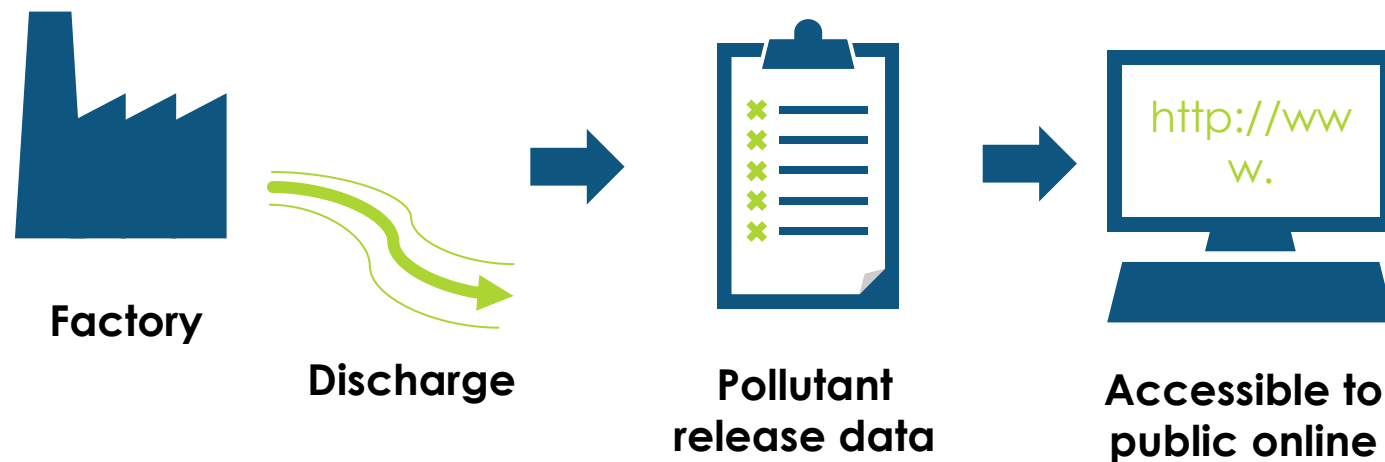
- ▶ The plant manufactures polymers and uses a number of highly-volatile chemicals. Killed five of the maintenance workers on the spot. The number of injured has ranged, in reports, from 12 to 17.

Our Challenges in Textile & Clothing Industry

Use major brands as a political tool to push governments to demand public disclosure of discharge of hazardous chemicals from factories.



Existing systems in US, EU and Japan: PRTR- Pollutant Release and Transfer Register.



Greenpeace believes that everyone, especially those living close to factories, have the right to know what is being discharged.

Our Challenges in Textile & Clothing Industry

- Campaign has secured global Detox Commitment from **76 international brands, retailers and suppliers**.
- Campaign contributed to **collaboration in Italy**, where 42 companies are working together to achieve Detox.
- Campaign had **political impact**. Achieved policy changes e.g. China's enforcement of stricter wastewater standards.



ZERO DISCHARGE OF HAZARDOUS CHEMICALS (ZDHC)

GREENPEACE



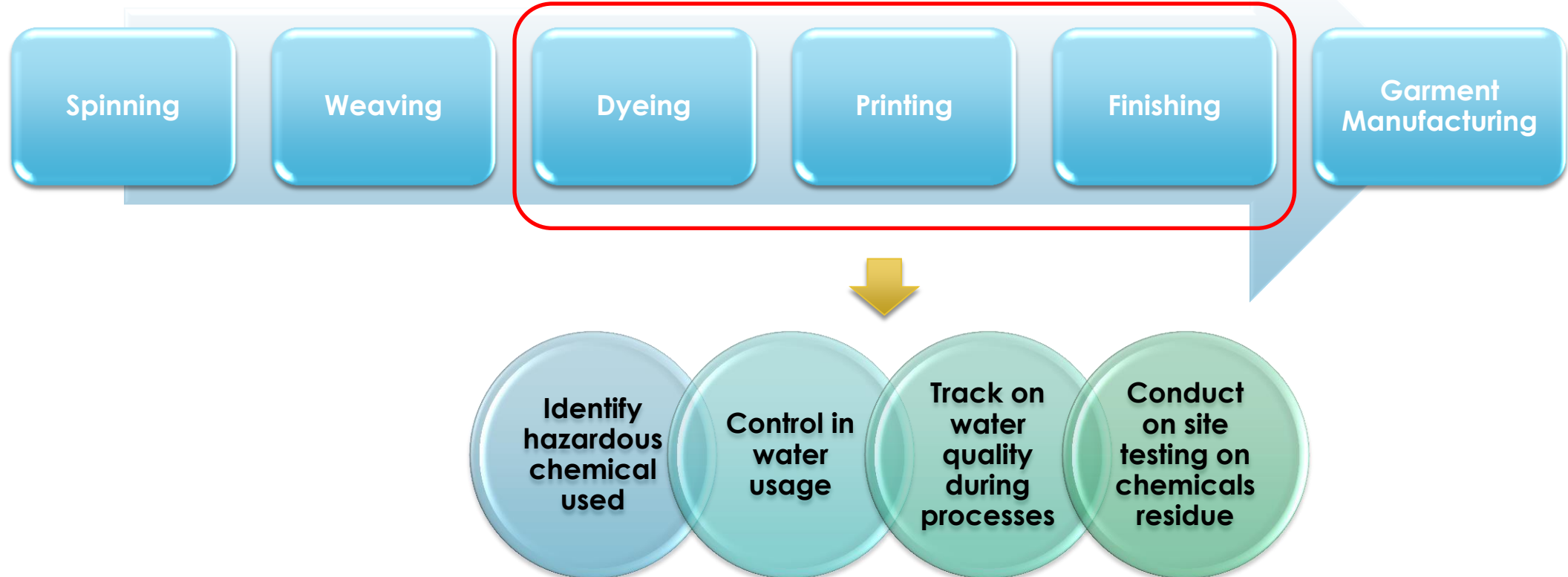
Image source: www.ecouterre.com



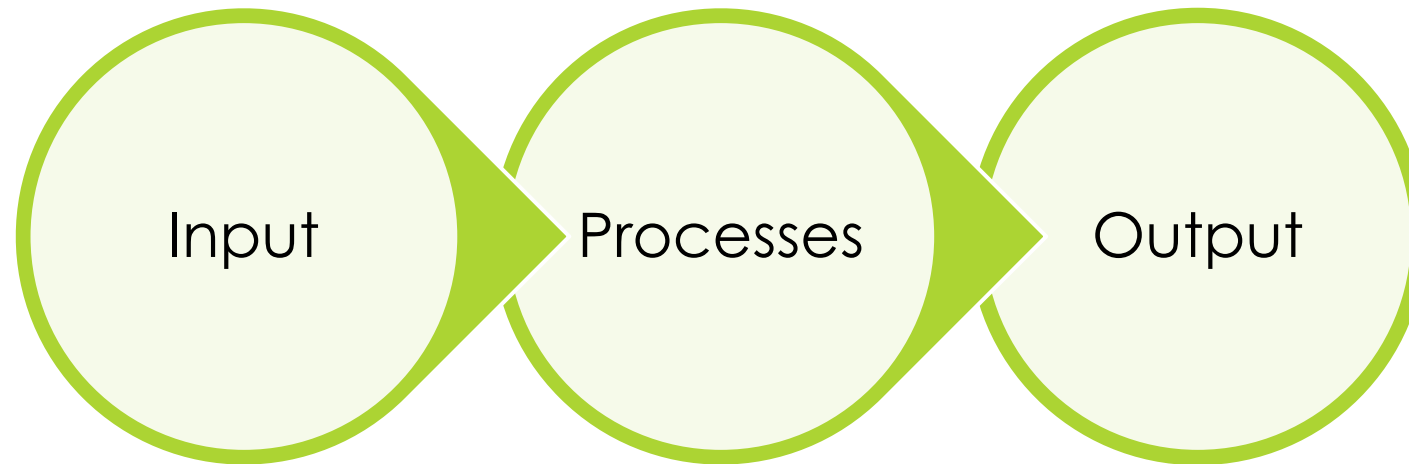
Ø ZDHC



How to Achieve Cleaner Wet Processing?

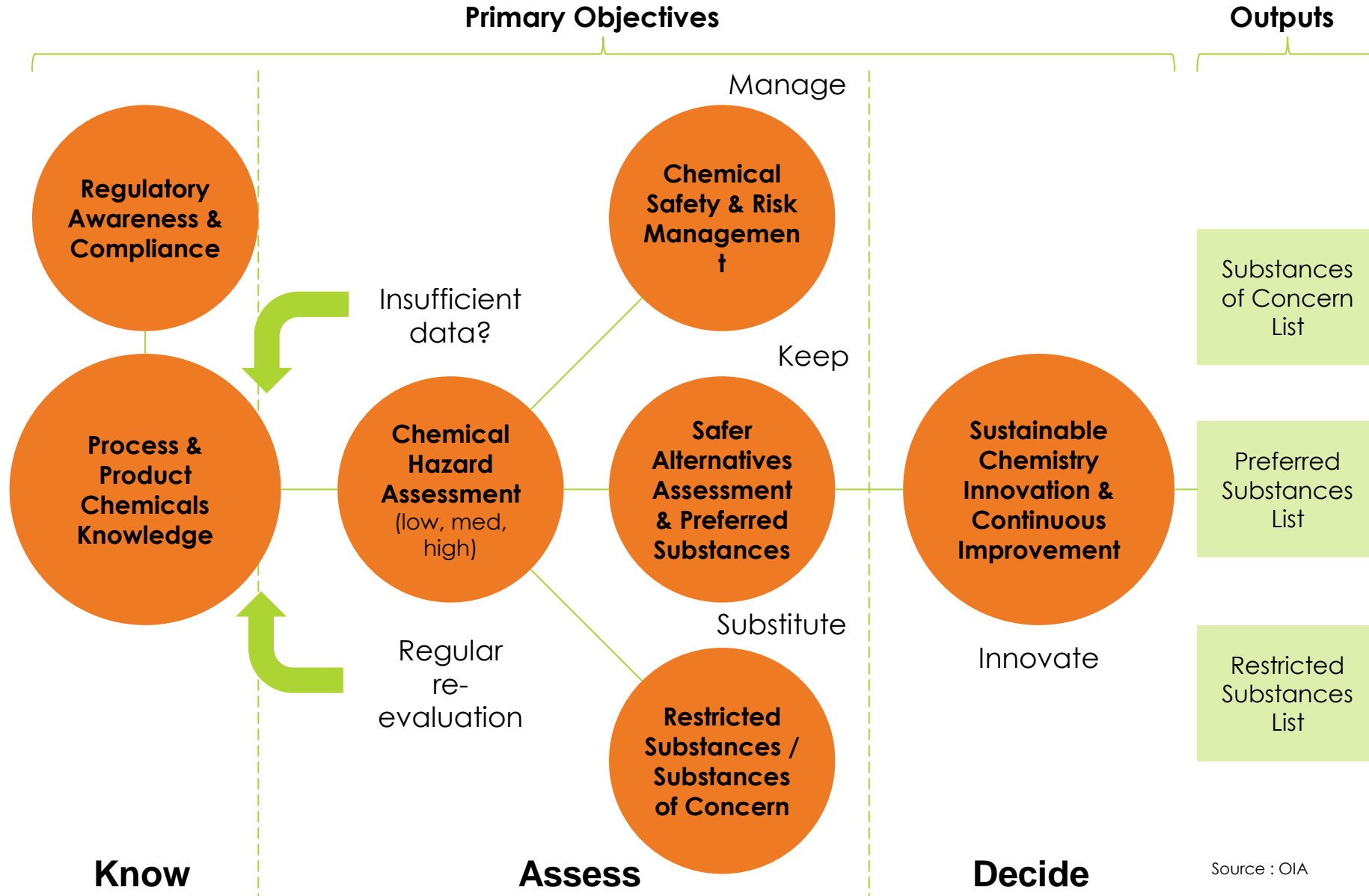


Sustainable Chemical Management

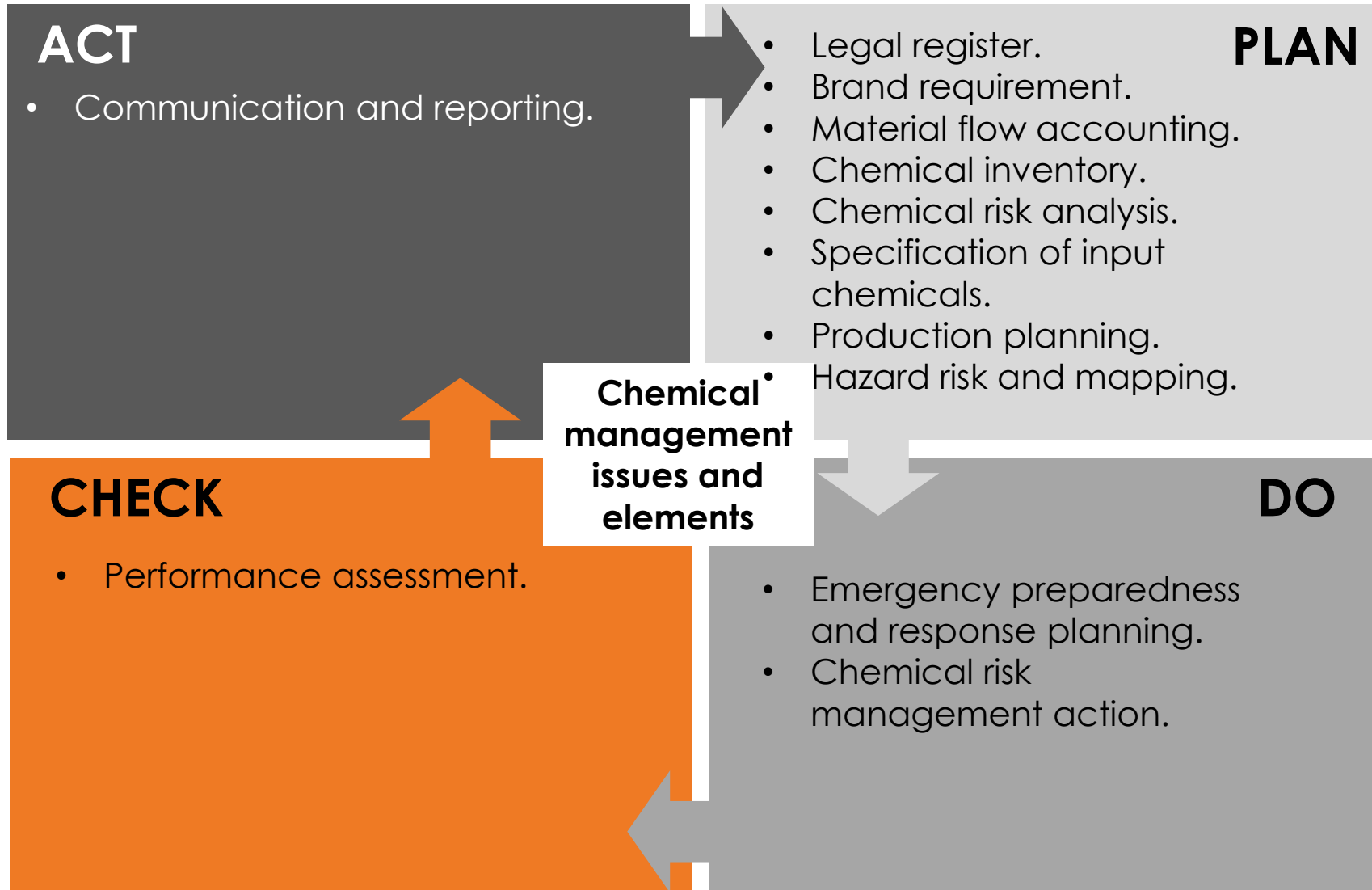


Get to know your facility environmental management

Sustainable Chemical Management



Plan, Do, Check, Act



Implementing challenges?

- ▶ Lack of knowledge and expertise (How to start? Complexity associated with inventory management, financial counterpart and chemical inventory valuation)
- ▶ Not familiar with environment regulatory compliance
- ▶ Limited Resources



Review registered labs and workers



Review personnel safety training records



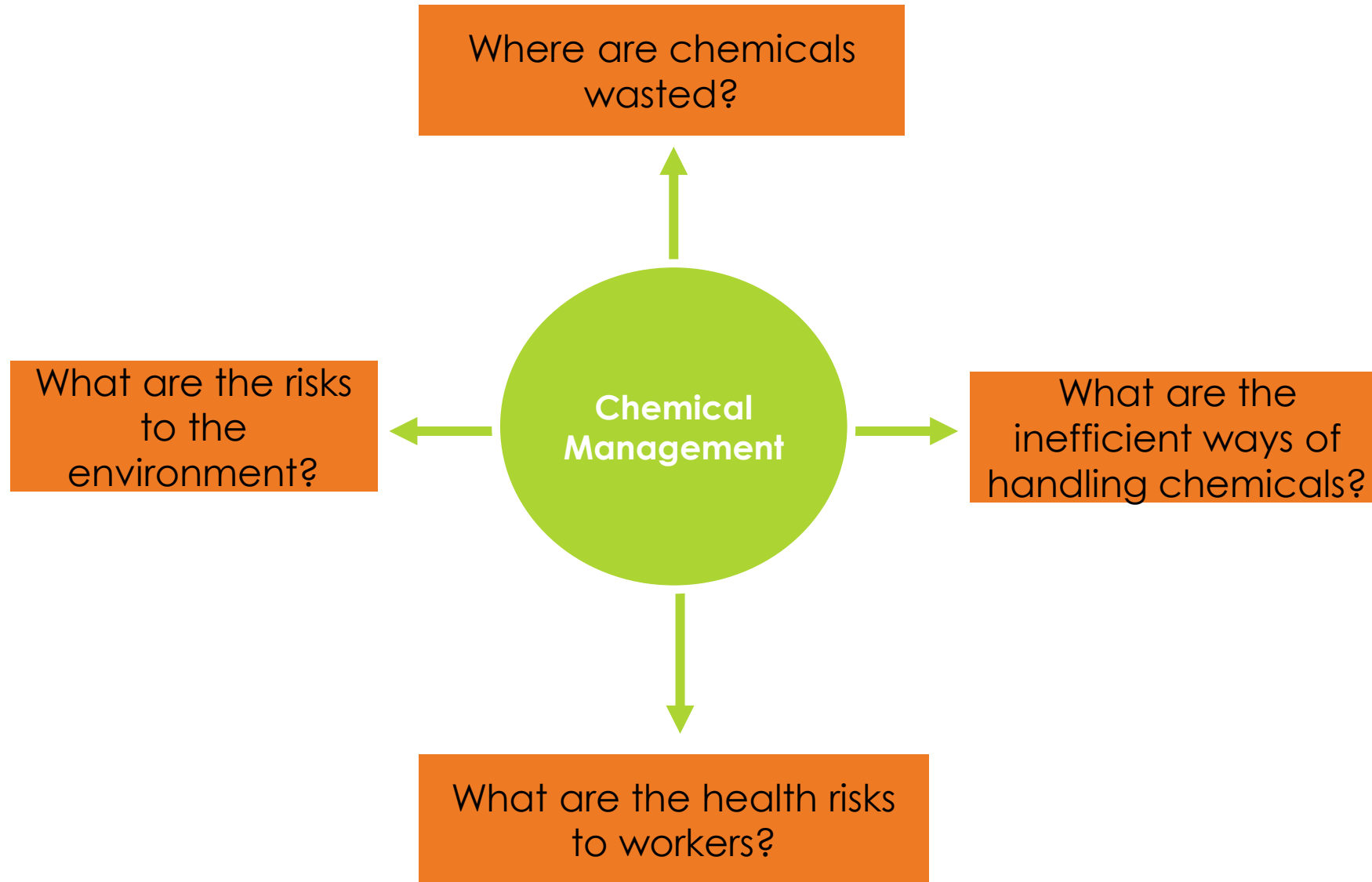
Enter and update chemical inventory



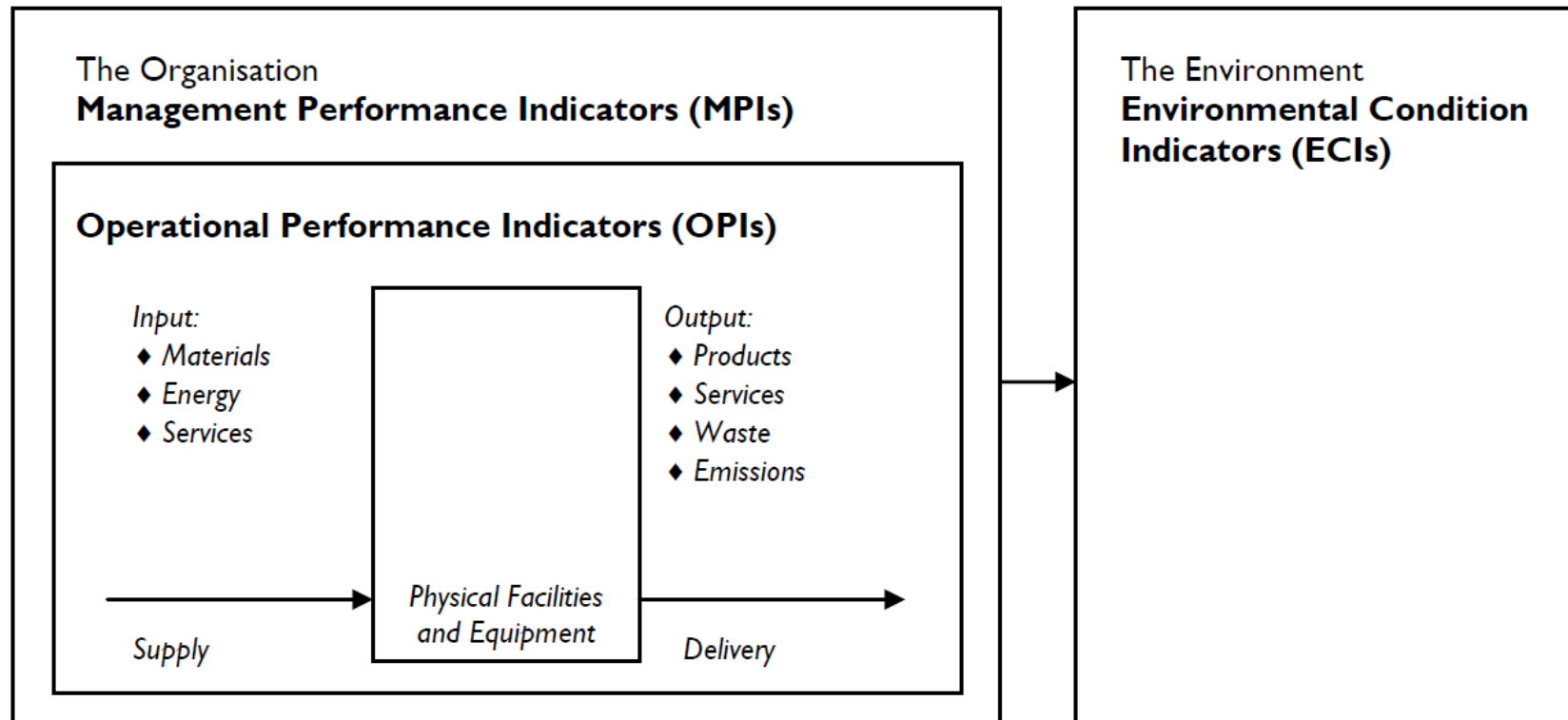
Respond online to EH&S safety assessment items

KEEP IT SIMPLE AND PRACTICAL

11



As per ISO 14031: Guidelines for Environmental Performance Evaluation



6 steps to Chemical Substitution

1. Define the Problem

Describe hazards and useful properties of these chemicals.



2. Set substitution criteria

Set criteria to eliminate alternatives that are not safer or not safe enough.



3. Search for alternative

Search within your own company, internet, authorities, professional associations, NGOs, trade unions and supplier



4. Assess and compare alternative

Assess all alternatives with the same method/tool for comparability



5. Conduct pilot experiment

Test substitution on pilot scale. Assess substitution as regards to functional performance, impact on workers, environment or consumers.



6. Implement and improve

Think about measures would be needed when implementing substitution at full capacity. Identify points to improve.

MORE SUSTAINABLE PRINTING: MORE OPTIONS

Bio-Discharge Printing:

An alternative to conventional discharge printing based on enzymes such as horseradish peroxidase.

PA/PU Water-Based Prints:

Compared to plastisol, water-based inks significantly reduce the use of and worker exposure to potentially hazardous chemicals.

Silicon-Based Inks:

Unlike plastisol inks, silicone based inks do not contain PVCs and plasticisers. Since the ink consists of 100% silicone, it does not contain solvents or water, allowing for quick curing at relatively low temperatures.

Automation-dosing:

Linked with a system then automatically to control on dosing of each preparation and production.

E-learning
platform for
implementing
Effective
Chemical
Management
System

Chemicals.cita.org.hk

Organizer



香港製衣業總商會
The Federation of Hong Kong
Garment Manufacturers

Implementation Agent



製衣業訓練局
CLOTHING INDUSTRY TRAINING AUTHORITY

Funded by SME Development Fund

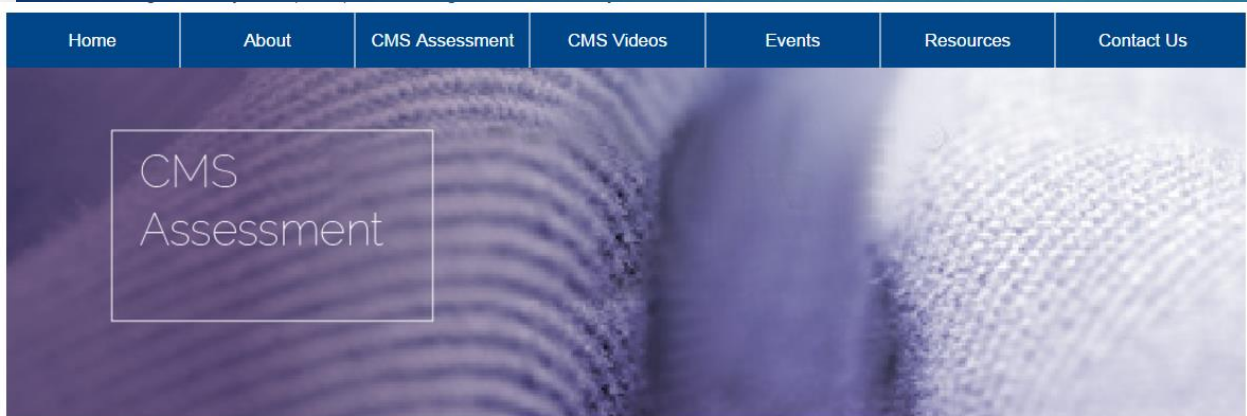


工業貿易署
Trade and Industry Department

Disclaimer

"Any opinions, findings, conclusions or recommendation expressed in this material/event(or by member of the Project team) do not reflect the views of the Government of the Hong Kong Special Administrative Region, Trade and Industry Department of the Vetting Committee of the SME Development Fund"

CMS Assessment Questions



CMS Assessment

* 4.1 Do you review the chemical related regulation among the following area and ensure the compliance?

- Chemical related operation
 Supplier and Sub-contractor requirements
 None of them

* 4.2 Do you document the result?

- Yes No

* 4.3 Do you regularly review the requirements?

- Yes No

<< Previous Page Save and Exit Next Page >>

CMS Assessment

* 5.1 Have you reviewed it periodically with a physical walkthrough?

- Yes No

* 5.2 Do you regularly review the walkthrough?

- Yes No

<< Previous Page Save and Exit Next Page >>

CMS Assessment

* 6.1 Do your chemical inventory include the following items?

- Storage area
 Product name
 Substance name
 CAS number
 Hazardous type and code
 SDS availability
 Minimum storage quantity without permit
 Supplier information
 Monthly purchase quantity
 Monthly consumption quantity
 Monthly wastage quantity
 Chemical balance
 Compliance of brand MRSL
 Compliance of brand RSL
 None of them

<< Previous Page Save and Exit Next Page >>

CMS Report Generation

Download Implementation Manual of Chemical Management

Response	Site Name	Submitted on:	Total Score	Action
8	BA	18/05/2017 11:15:27		Resume Assessment
7	wew	28/04/2017 14:18:17	42	View Action Plan Report CMS Implementation Manual
6	C	28/04/2017 10:27:32	52	View Action Plan Report CMS Implementation Manual
5	B	28/04/2017 10:18:50	98	View Action Plan Report CMS Implementation Manual
4	A	28/04/2017 10:14:20	33	View Action Plan Report CMS Implementation Manual
3	ghgy	28/04/2017 09:59:29	23	View

Funded by SME Development Fund



Organizer



Implementation Agent



Disclaimer

Any opinions, findings, conclusions or recommendations expressed in this material/event (or by members of the Project team) do not reflect the views of the Government of the Hong Kong Special Administrative Region, Trade and Industry Department or the Vetting Committee of the SME Development Fund and the Dedicated Fund on Branding, Upgrading and Domestic Sales (Organisation Support Programme).

© 2017 The Federation of Hong Kong Garment Manufacturers. All Rights Reserved.

Action_Item_Rep...doc

CMS Implementa...pdf

CMS Action Plan Report

Chemical Management System (CMS) Assessment
For
CITA
CMS Assessment Results & Action Plan Report
Generated by
Chemical Management System (CMS) E-platform

2. Assessment Results

Site Information	
Site Name	CITA
Assessment Date	4/28/2017 8:51:38 AM

Overview of Score	
Full Mark	100
Overall Score	100
Grading	A

Performance of Chemical Management System	
Category	Score
Procedure	40
Documentation	40
Training and Review	20

*Grading Guidance

Grading	Score
A	86-100
B	51-85
C	26-50
D	0-25

3. Action Plan

No.	Category	Recommendation	Action Items	Responsible Person	Estimated Completion Date	Completion Result
1	Procedure	Based on risk assessment results, different follow up actions should be taken. For midium risk level, manufacturer should set up simple operation procedure to manage chemical use.	Please refer to the following sections in the manual for follow up actions: - Commitments to Chemical Management System (CMS) - Process for Conducting a Risk Assessment			

CMS Implementation Manual

Implementation Manual of Chemical Management

Project title: Development of an e-platform of chemical management system for the Hong Kong textile and clothing industry
(Reference No.: D15 003 003)

Funded by SME Development Fund



Organizer



Implementation Agent



Chemical Name	Ingredient A: 40%	Ingredient B: 60%
DANGER		
Highly flammable liquid and vapor, fatal if swallowed, major toxicity to aquatic organisms		
[Prevention measures]		
a) Keep away from heat/spark/open flame/hot surface, use only non-sparking tools;		
b) Keep container tightly closed;		
c) Use electrostatic prevention measures, ground/bond container and receiving equipment;		
d) Use explosion-proof electrical ventilating/lighting and other equipment;		
e) Wear protective gloves/eye protection/face protection;		
f) Wash contracted body parts thoroughly after handling;		
g) Do not eat, drink and smoke at the workplace; and		
h) Avoid release into the environment.		
[Accident response]		
a) If on skin (or hair): immediately remove (take off) all contaminated clothing. Rinse skin with water/shower;		
b) If swallowed, induce vomiting, get immediate medical advice/attention;		
c) Collect spillage; and		
d) In case of fire, use dry chemical, foam, or carbon-dioxide for extinction.		
[Safety storage]		
a) Store in well-ventilated place. Keep cool; and		
b) Store locked up.		
[Discard disposal]		
a) Dispose of contents/containers by incineration.		
Please refer to the Material Safety Data Sheet		
Supplier: xxxxxxxxxxxxxxxxxxxxxxxx Phone Number: xxxxxxxxxxxxxxxxxxxxxxxx		
Address: xxxxxxxxxxxxxxxxxxxxxxxx Postcode: xxxxxxxxxxxxxxxxxxxxxxxx		
Emergency phone number for chemical accidents: xxxxxxxx		

Figure 5-5 Example of precautionary chemical label in China (in English)¹⁰

chemicals.cita.org.hk

Implementation Manual

- ▶ Commitments to CMS
- ▶ Regulation Compliance
- ▶ Risk Assessment
- ▶ Chemical Inventory
- ▶ Chemical Storage and Handling
- ▶ Chemical Contingency Planning
- ▶ Brand Requirements Compliance (Advanced Level)
- ▶ Supplier and Sub-contractor Management (Advanced Level)

Additional Resources

- ▶ Useful Websites
- ▶ Fashion Brands Requirements
- ▶ Government Regulations
- ▶ Other Useful Resources
- ▶ Case Study

Thank You