

# **BEST CHEMICAL MANAGEMENT PRACTICE (BCMP) GUIDELINE**

## Table of Contents

Introduction .....	4
HOW to use this guideline? .....	5
Best Chemical Management Practice (BCMP) .....	6
Section 1 Chemical management policy and commitment .....	6
Section 2 Organization .....	6
Section 3 Routine .....	7
Section 4 Training.....	7
Section 5 Documentation.....	7
Section 6 Evaluation.....	8
6.1 Onsite Assessment .....	8
6.2 Regulatory Awareness.....	8
6.3 Chemical hazard assessment.....	9
6.4 Chemical hazard Information .....	9
Section 7 Implementation.....	10
7.1 Purchasing Policy.....	10
7.2 Transporting chemicals .....	11
7.3 Labeling .....	11
7.4 Storage .....	12
7.5 Handling chemicals.....	16
7.6 Weighting and transferring chemicals.....	19
7.7 Application of chemicals.....	21
7.8 Chemical waste.....	21
7.9 Chemical discharge through waste water .....	22
Section 8 Monitoring.....	23
8.1 Quality Assurance – Chemicals used in production .....	23
8.2 Quality Assurance - Raw materials and finished products .....	24
Section 9 Audit/Self-Assessment.....	25
Section 10 Traceability and Transparency .....	25
10.1 Chemical material flow.....	25
10.2 Disclosure .....	25
Section 11 Preventive and Corrective actions .....	25
11.1 Non-conformities, Corrective Action and Preventive Action .....	25

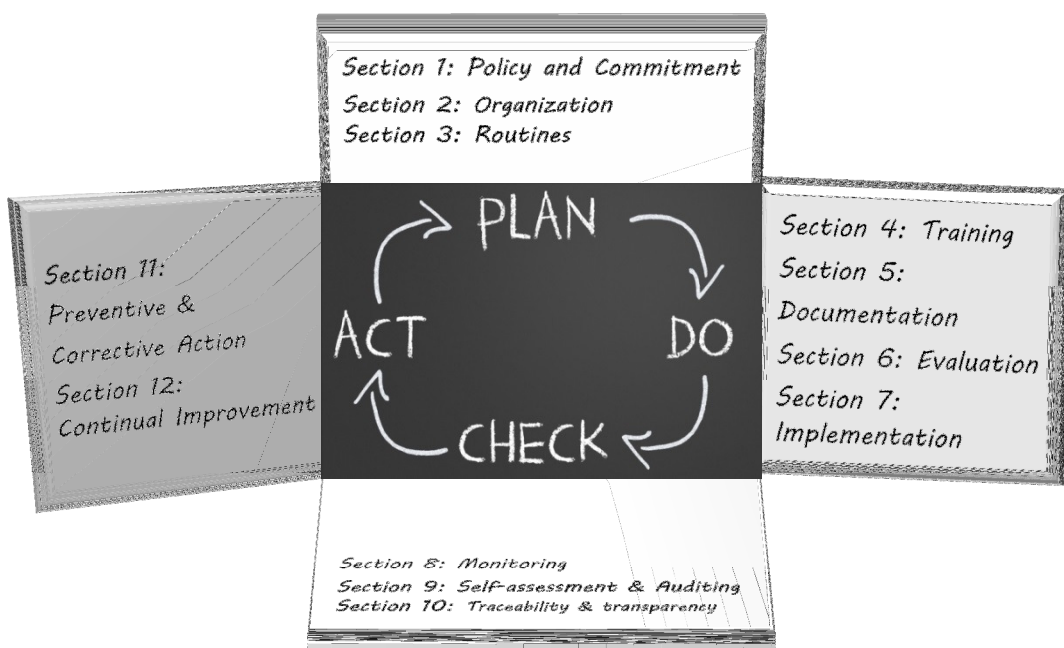
11.2	Emergency Plan .....	26
<b>Section 12</b>	<b>CONTINUAL IMPROVEMENT .....</b>	<b>26</b>
12.1	Identify the hazardous chemicals existed in processing .....	26
12.2	Finding best alternatives .....	26
12.3	Adopting the new technologies which are more sustainable .....	26
Appendix 1: Safety Data Sheet (SDS) .....		27
Appendix 2: Chemical Inventory List (CIL) .....		28
Appendix 3: Labelling OF CHEMICAL PRODUCTS.....		29
APPENDIX 4: Incompatibilities by Hazard .....		30
Abbreviations.....		31

Version	Date	Changes made	Page
1.0	March 2016	Original	-

## Introduction

Textile production usually involves the use of different chemicals. To avoid the use of hazardous chemicals in production and minimize their adverse impact to our environment, H&M highly encourages implementation of proper chemical management system in factories. This document is to provide guidelines to factories for establishment of a Best Chemical Management Practice and help them to identify the areas of improvement.

The guidelines suggested in this document follow the notion of Plan-Do-Check-Act (PDCA) approach. A total of 12 sections are involved in the Plan-Do-Check-Act cycle for controlling and monitoring of chemicals from their entry into factories to discharge from factories. Factories can follow the suggested practices step by step to strengthen their chemical management system.



**Plan-Do- Check- Act** is a commonly used repetitive four-step problem solving process.

**Plan** Establish objectives and process necessary to deliver results in accordance with expected output. The expected output is the focus, while the completeness and accuracy of the specification is also part of improvement.

**Do** Execute the plan to achieve the objective

**CHECK** Measure the implementation and compare the output against the expected results to find out the differences

**ACT** Analyses the differences to determine their cause. Each will be part of either one or more of the PCDA steps. Determine where to apply changes that will secure improvement

## **How to use this guideline**

This guideline provides suggested best practices to suppliers to improve their chemical management system. Factories are required to follow this guideline to monitor all activities involved in their production processes.

Some suggested practices listed in this guideline are classified as “Minimum requirement” (MR). All practices classified as “MR” are compulsory requirements for suppliers to be implemented in their production units. Failure in fulfilling any MR will lead to business consequences.

## Best Chemical Management Practice (BCMP)

### Section 1

#### Chemical management policy and commitment

1.1 The chemical management policy and commitments are set by top management and understood by all staffs of factory.	
1.2 A complete policy should cover all areas that concern the worker & customer safety and protection of environment. It can be divided into below five areas: <ul style="list-style-type: none"><li>• Knowledge on chemical purchase, usage, storage and disposal.</li><li>• Assessment on chemical hazard to environment and human's health</li><li>• Chemical Safety Management</li><li>• Transparency and traceability on chemical use (from purchase to disposal)</li><li>• Best available technologies and Innovations</li></ul>	
1.3 The commitments must be clear and achievable.	
1.4 All relevant staffs should understand the chemical management policy and commitments.	
1.5 The written policy should be signed by top management and well documented.	
1.6 The chemical management should be regularly reviewed and updated.	

### Section 2

#### Organization

2.1 A chemical management team should be set up within the organization. The chemical management team should be composed of top management from different departments.	
2.2 The chemical responsible person should be assigned by the top management.	
2.3 The chemical responsible person should have qualified chemical educational background, and/or preferable experience of chemical management.	
2.4 The organization structure and responsibilities of each individual should be written down and well documented.	
2.5 The chemical responsible person or top management should ensure the chemical management policy is well implemented in the factory.	

## Section 3

### Routine

3.1 Operation routines should be setup for all aspects, including communication, implementation, feedback, control and corrective action.	
3.2 All above mentioned routines must be written down and well documented.	

## Section 4

### Training

4.1 Chemical responsible should identify training needs and ensure allocation of sufficient resources for trainings.	
4.2 Chemical responsible should ensure all chemical handling staff(s) is (are) trained and competent on handling of chemicals.	
4.3 All employees should receive a basic chemical training on chemical safety and hazards annually.	
4.4 Appropriate practical trainings should be offered to chemical handling staff(s) regularly.	
4.5 Top management staff(s) should be trained to ensure implementation of chemical management policy and chemical management goals are met.	
4.6 Records of all staffs training and qualifications should be well documented.	

## Section 5

### Documentation

5.1 The chemical management policy should be well documented. The implementation of the chemical policy should be recorded to provide evidence for compliance of standards and legislations.	
5.2 The contents of the management policy and chemical restriction should be well understood by the chemical responsible	MR (Q)
5.3 A documentation control procedure <sup>1</sup> should be developed to provide a framework on how information is created and managed in the organization.	

---

<sup>1</sup> Documentation control procedure should include the procedure required to create new document, how to trace for changes/updates in documents and the approval procedure of new/revised documents.

5.4 All documents should be regularly reviewed and updated.	
5.5 A Standard Operation Procedure should be established and documented to update and inform subcontractors on latest requirements, such as H&M chemical restriction <sup>2</sup> .	
5.6 Latest version of relevant part/parts of H&M Chemical Restrictions <sup>2</sup> and Implementation Toolkit should be printed out or/and available.	MR (Q)
5.7 All obsolete versions and latest versions should be stored separately to avoid any misuse of documents.	

## Section 6 Evaluation

### 6.1 Onsite Assessment

6.1.1 Chemical responsible should inspect all different stages of chemical management, including purchasing, usage, storage and disposal stages of chemicals, for assessment of the overall chemical management system of factories.	
6.1.2 All problems, including chemical lost, chemical contamination, wastage of chemicals, use of expired chemicals and chemicals harmful to workers, should be recorded in inspection sheet.	
6.1.3 Corrective/preventive actions should be identified and executed solve or prevent chemical problems. All corrective/preventive actions should be recorded and well documented.	

### 6.2 Regulatory Awareness

6.2.1 Chemical responsible should have deep knowledge and awareness on changes in regulations related to environment, worker safety and compliance of products. Regulatory covers the countries legislation, and brand's Restricted Substances List (RSL) and Manufacturing Restricted Substances List (MRSL) requirement.	
6.2.2 A Standard Operation Procedure should be established to identify and monitor regulation updates or changes.	
6.2.3 Chemical responsible should inform all relevant staffs regarding any updates or changes in regulation.	

<sup>2</sup> Latest version of H&M chemical restriction can be downloaded from H&M supplier website.

\*Only banned organic solvents is concerned in minimum requirement. It will be updated time by time.



6.2.4 All chemicals used in factory and raw materials should fulfill country legislation or H&M requirement, whichever is more stringent.	MR (s)*
---	---------

### 6.3 Chemical hazard assessment

6.3.1 Chemical hazard assessment should be performed by chemical responsible and purchasing responsible to evaluate hazards of all chemicals and formulas used in facilities and identify necessary control of chemicals used.	
6.3.2 The chemical hazard assessment should include the evaluation of human, safety and environmental impact of hazardous chemicals, product quality and worker safety.	
6.3.3 All information about risk of chemical hazardous should be documented and available on site. This information might be provided by chemical suppliers or obtained from material safety data sheet (SDS) <sup>3</sup> , Certificate of Analysis (CoA) <sup>4</sup> , chemical labels or chemical expertise.	
6.3.4 The chemical hazard assessment results should be reviewed and updated periodically.	
6.3.5 The chemical hazards assessment should be documented. All records should be communicated and available to workers.	

### 6.4 Chemical hazard Information

6.4.1 The chemical hazard information can be obtained from chemical suppliers, SDS, labels, technical data sheet and CoA.	
6.4.2 SDS should be ready for all chemicals used and stored in factory.	
6.4.3 The chemical hazard information collected can be used for initial review of chemical ingredients.	
6.4.4 A complete SDS should cover 16 sections (refer to Appendix 1). Chemical hazard information stated in SDS should be listed out (if more than 0.01%).	
6.4.5 SDS should be available in local language.	
6.4.6 The chemical hazard information must contain a complete list of chemical ingredients. If the chemical ingredient list is not complete, i.e., total composition is not 100%, purchasing responsible should request chemical suppliers to provide complete ingredient information.	

<sup>3</sup> Example of SDS shown in Appendix 1

<sup>4</sup> CoA – Certificate of Analysis is a document that issued by a regulatory or quality assurance entity that confirm the products fulfill product specification and quality standard. It includes test results that performed on product.

6.4.7	All chemical hazardous information should be kept on site and should be available to workers.	
6.4.8	Declaration letter and agreement should be signed by chemical suppliers to confirm that chemical management policy can be fulfilled.	

## Section 7 Implementation

### 7.1 Purchasing Policy

7.1.1	Purchasing policy should be established in factory to ensure legal, safety and regulatory requirements to prevent the purchase of hazardous chemicals, and to ensure purchase of appropriate amount of chemicals.	MR(S)
7.1.2	Factory should assign one specific person having qualified chemical knowledge as purchasing responsible. The purchasing responsible should be well-trained and familiar with purchasing policy.	
7.1.3	Purchasing responsible should identify potential chemical suppliers for each chemicals substance.	
7.1.4	The preferred suppliers should be reviewed periodically to ensure they can meet all criteria in chemical management policy. A clear standard operation procedure should be available on how to evaluate and approve chemical suppliers.	
7.1.5	Purchasing responsible should be familiar with chemical properties of all chemical substances purchased.	
7.1.6	Purchasing responsible should review and check SDS of all chemicals purchased	
7.1.7	All chemical purchases should be recorded in chemical inventory list (CIL) <sup>5</sup> . The CIL should have information including chemicals supplier information, date of purchase, CAS number of chemicals, batch information, the quantity of chemicals purchased and storage location of chemicals.	MR(S)
7.1.8	Information of chemical suppliers should be kept on site and easily accessible.	
7.1.9	The purchasing policy should be reviewed and updated regularly.	
7.1.10	Purchasing responsible should communicate and share updated H&M chemical restriction (includes both RSL and MRSL) to their chemical suppliers	MR(Q)

<sup>5</sup> Template of Chemical Inventory List show in Appendix 2

## 7.2 Transporting chemicals

7.2.1 Chemicals should be transported under safety manner and according to SDS information.

## 7.3 Labeling

7.3.1 A guidance on labeling routine<sup>6</sup> and labeling format should be developed and implemented in the units

7.3.2 Chemical responsible should ensure all the label information is following the labeling routine.

7.3.3 Labels on chemical containers should include the chemical substance name, CAS/EC no. of the substance, supplier name, supplier contact information, hazard pictogram risk and safety phrase, hazardous statement, batch info, purchase date and expiry date (refer to Appendix 3). All information should be provided by Chemical manufacturer.

7.3.4 A clear label should be affixed to all chemical containers and bottles for easy identification.



*Bad practice*

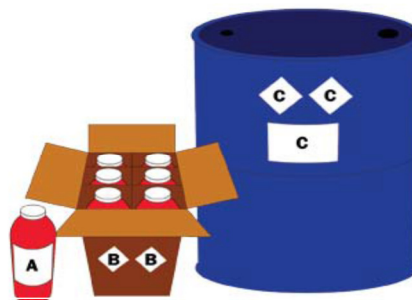


*Picture 1. Unclear labels on chemical containers.*



*Good practice:*

*Picture 2. Clear label should be affixed to all chemical containers*



A: on bottle, B: Outer packaging; C: Containers

<sup>6</sup> The guideline on labeling routine should cover both the labeling on chemical containers and labeling within the production unit.

## 7.4 Storage

<p>7.4.1 Chemicals should be stored safely and properly to provide a safe work place.</p>	
<p>7.4.2 A standard operation procedure of storage of chemicals should be developed to ensure the chemicals are stored in proper way.</p>	
<p>7.4.3 The storage guideline should provide a clear instruction in local language on how and where chemicals should be stored.</p> <div data-bbox="334 531 686 909" data-label="Image"> </div> <p data-bbox="792 779 971 810"><i>Good practice:</i></p> <p data-bbox="686 821 784 909">✓</p> <p data-bbox="792 848 1308 919"><i>Picture 3.Storage guideline available in local language</i></p>	
<p>7.4.4 A warning notice, e.g. “Chemical Storage Area “, should be visible in all storage areas</p>	
<p>7.4.5 Chemical storage room should be in good ventilation to keep humidity and temperature at optimal levels. No direct sunlight on chemicals.</p> <div data-bbox="334 1178 675 1629" data-label="Image"> </div> <p data-bbox="834 1339 932 1423">✗</p> <p data-bbox="938 1402 1089 1434"><i>Bad practice</i></p> <p data-bbox="740 1472 1287 1503"><i>Picture 4. Chemicals are stored under Sunlight</i></p>	<p>MR(Q)</p>



*Bad practice*

*Picture 5. Chemicals are stored under humid conditions*

7.4.6 All chemicals should be stored according to SDS information.

7.4.7 Abstracted/simplified SDS in local language should be available in storage room.  
Information includes :

- Chemical product identification & company name,
- Hazards identification,
- First Aid measures,
- Accidental release measures,
- Personal protective equipment,
- Toxicological information



*Good Practice*

*Picture 6. Simplified SDS contains required information and available in local language*

7.4.8 Chemicals should be stored on impervious surfaces in a systematic way and easily identified by labels.









Good Practice

Picture 7. Chemicals stored on impervious surface, in a systematic way and easily identified by labels

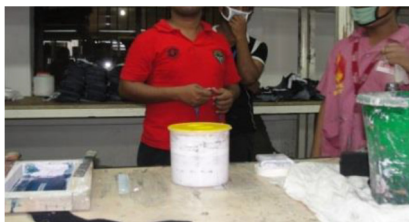

<p>7.4.9 All chemicals stored should be recorded in Chemical Inventory list (CIL) to avoid excessive storage of dangerous chemicals. The CIL should be updated and reviewed regularly.</p>	<p>MR (S)</p>
<p>7.4.10 Incompatible chemicals should be stored separately. E.g. Potassium Permanganate cannot be stored with strong bases and acids. ( See Appendix 4)</p>	
<ul style="list-style-type: none"> <li>Reactive chemicals should be stored away from possible reaction sources, such as the water, and should be stored in a low humidity environment.</li> </ul>	
<ul style="list-style-type: none"> <li>Flammable or combustible chemicals should be stored away from sources of ignition in designated area.</li> </ul> <div style="text-align: center;"> <p>The diagram consists of four panels arranged in a 2x2 grid. The top-left panel is labeled 'Before' and shows a common storage area with orange and blue drums. The top-right panel is labeled 'After' and shows a violent reaction (explosion) between the drums. The bottom-left panel is labeled 'Before' and shows the drums segregated into separate areas. The bottom-right panel is labeled 'After' and shows a spillage in the segregated area without a reaction.</p> </div> <p>Picture 8. Consequences of improper storage and proper storage</p>	

<ul style="list-style-type: none"> <li>• The amount of flammable or combustible chemicals stored should fulfill fire safety requirements.</li> </ul>	
<ul style="list-style-type: none"> <li>• Acids and bases should be segregated from each other.</li> </ul>	
<ul style="list-style-type: none"> <li>• Oxidizers should be kept away from other chemicals, especially flammables or combustibles.</li> </ul>	
<ul style="list-style-type: none"> <li>• Corrosives should be kept away from substances that they may react with and release corrosive</li> </ul>	
<p>7.4.11 Chemicals must be sealed when not in use.</p>	
<p>7.4.12 Containers should not be corroded, broken, rusted or leaking. Secondary containment is required for the storage of all regulated hazardous chemicals.</p>	
<p>7.4.13 Chemical drums should be placed on elevated racks and far away from drains.</p>	
<p>7.4.14 Chemicals should not be stored higher than 1.5 m.</p> <div data-bbox="345 928 704 1402" data-label="Image"> </div> <div data-bbox="722 1066 987 1171" data-label="Text"> <p><b>X</b> <i>Bad Practice</i></p> </div> <div data-bbox="722 1213 1209 1283" data-label="Caption"> <p><i>Picture 9. Chemicals are stored too high, posing risk for work accident</i></p> </div>	
<p>7.4.15 First-in-first-out system should be implemented in the storage room to avoid chemical degradation.</p>	MR(Q)
<p>7.4.16 Expired chemicals should be removed from chemical storage room and re-collected by chemical suppliers or qualified third party.</p>	
<p>7.4.17 Food, Beverages and Tobacco should not be allowed in chemical storage area.</p>	
<p>7.4.18 First aid box, Personal Protective Equipment (PPE) box, Proper extinguisher, emergency shower/eye wash station, spill kits, Secondary containment should be placed in chemical storage area.</p>	



 <p style="text-align: center;">   <b>Good Practice</b> </p> <p style="text-align: center;"><i>Picture 10. Safety equipments available in chemical storage room</i></p>	
<p>7.4.19 Chemical storage room is not allowed to enter without permission.</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;">  </div> </div> <p style="text-align: right;"><i>Picture 11. Good Practice</i></p>	

## 7.5 Handling chemicals

<p>7.5.1 Chemical handling procedure should be introduced in workplace to minimize the hazardous risk during use of chemicals.</p>	
<p>7.5.2 Chemical handling staff(s) should be trained on the chemical handling procedure way.</p>	
<p>7.5.3 Appropriate personal protective equipment (PPE) should be provided to the workers.</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;">  <p><i>Bad Practice</i></p> <p><i>Picture 12. Workers don't have appropriate mask and other PPE during working in workshop</i></p> </div> </div>	
<p>7.5.4 Chemical handling staff(s) should wear proper PPE, such as gloves, masks and safety glasses, when handling chemicals. The selection of PPE should be based on potential hazard of chemicals handled by workers.</p>	





Good Practice

Picture 13 and 14. Chemical handling staff wear appropriate PPE



Bad Practice




Picture 15. Chemical handling didn't wear protective shoes.

7.5.5 Clear instruction and safety precaution (in local languages) on chemical handling should be clearly stated in the working area.



Good Practice

Picture 16. Clear instruction and safety warning in local languages are stated in workshop.

7.5.6	Chemical handling staff(s) should check the expiry date of chemicals before use.	
7.5.7	Chemical handling staff(s) should review SDS and understand the hazards before using a chemical.	
7.5.8	Chemical hazard assessment should be done periodically.	
7.5.9	Chemicals should be well-covered when not in use to avoid contamination.	 <p data-bbox="334 947 613 1041">  <i>Bad practice</i> </p> <p data-bbox="464 1056 1060 1087"> <i>Picture 17 and 18. Chemicals are not well-covered.</i> </p>
7.5.10	Chemicals should be kept in clean and ventilated area which keeps away from sunlight.	
7.5.11	Chemicals should be used according to first-in-first-out basis.	
7.5.12	Chemical handling staff(s) should wash their hands after handling chemicals.	
7.5.13	Food, Beverages and Tobacco should not be allowed in workplace	 <p data-bbox="646 1486 948 1518"> <i>Picture 19. Warning label</i> </p>

7.5.14 First aid box, PPE box, Proper extinguisher, emergency shower/eye wash station, spill kits, Secondary containment should be equipped.



Picture 20. Emergency shower/ Eye wash station

## 7.6 Weighting and transferring chemicals

7.6.1 Chemicals should be transferred in a correct way to avoid contamination and ensure worker safety.

7.6.2 Chemical handling staff(s) should be trained and instructed on transferring chemicals.

7.6.3 Appropriate and clean tools should be used when measuring and weighting the chemicals to avoid the cross-contamination of chemicals.



*Good practice*





Picture 21. Area of weighting, weighting equipment

and tools should be clean



*Bad practice*

Picture 22. Measuring tool and containers are dirty and chemicals are easily getting contaminated.

7.6.4	Reactive and volatile chemicals should be transferred in a closed and well ventilated system to avoid spreading of chemical vapors and spillage.	
7.6.5	Equipment and apparatus used for dispensing chemicals must be clean, dried and working properly.     <i>Good practice</i>  <i>Picture 23. Chemical weighting area should be clean and tidy.</i>    <i>Bad practice</i>   <i>Picture 24. Measuring equipment is dirty.</i>	
7.6.6	Materials of containers used for dispensing must be compatible with the chemicals.	
7.6.7	Dispensed chemicals should not be returned to stock to reduce the risk of contamination.	
7.6.8	Transporting apparatus should be available to move chemical materials to ensure safety.	
7.6.9	The usage of chemicals must be recorded in a chemical usage log book. The chemical usage log book should record the person using the chemicals, time of use of chemicals, used for which product/process and the quantity of chemicals used.	

## 7.7 Application of chemicals

7.7.1	Production responsible and Chemical handling staff(s) should be well trained on how to handle and use of chemicals	
7.7.2	Chemical handling staff(s) should ensure best use of chemicals. The amount of chemicals used should be with reference to suggestions from chemical suppliers. Excessive use of chemicals should be avoided.	
7.7.3	The total amount of chemicals used in production should be calculated.	
7.7.4	The amount of chemicals that are contaminated, lost or wasted should be evaluated.	
7.7.5	Chemicals should not be pre-mixed before use.	

## 7.8 Chemical waste

7.8.1	Factories should set up a procedure to minimize the amount of chemical waste produced.	
7.8.2	Factories should develop a guideline on chemical waste disposal.	
7.8.3	Factories should appoint a responsible person for chemical waste disposal.	
7.8.4	Containers for chemical waste should be chemical-compatible.	
7.8.5	All waste containers must be covered.	
7.8.6	Appropriate transporting apparatus, e.g. spring loaded funnels should be used for adding waste to waste containers.	
7.8.7	Containers should not be fully filled. Each container must have at least one inch of headspace above the waste.	
7.8.8	The waste container should be labeled with hazardous waste label.	
7.8.9	The waste should be stored in a safe area, and should be away from emergency equipment such as safety showers and emergency access panels.	
7.8.10	The waste container should not block exits of workplace.	

7.8.11 Empty chemical containers should be kept separate and stored in designated area which not directly affected by direct sunlight, rain, fire.



*Bad practice*

*Picture 25. Chemical drums are not stored in a proper way.*



*Good practice*

*Picture 26. Empty chemical containers should be stored separately and not directly under sunlight.*

7.8.12 Incompatible waste should be separated.

7.8.13 Chemical waste should be sent to approve chemical waste companies for treatment.

7.8.14 Chemical waste should be disposed and treated legally.

## 7.9 Chemical discharge through waste water

7.9.1 Factories should develop a guideline on controlling the chemicals discharged through waste water.

7.9.2 Factories should appoint a responsible person for controlling and monitoring

	waste water discharge.	
7.9.3	Factories should develop and implement environment-impact evaluation on chemical discharge.	
7.9.4	Factories should set annual goals to minimize the amount of waste water discharge and the chemicals released through all pathways.	
7.9.5	Waste water should be treated by effluent treatment plant before discharged to open bodies	MR (S)
7.9.6	The discharged wastewater should meet legal or H&M requirement whichever is stringent.	MR(S)
7.9.7	Quality and quantity of waste water discharged should be monitored and recorded periodically.	
7.9.8	Waste water should be tested at least monthly; and record should be kept for 2 years	
7.9.9	The amount of waste water discharged and goals on controlling of chemical discharge should be disclosed and transparent to public.	
7.9.10	Corrective action should be implemented when non-conformities are found.	

## Section 8 Monitoring

### 8.1 Quality Assurance – Chemicals used in production

8.1.1	Chemical responsible should work closely with chemical suppliers to ensure well implementation of chemical management policy including H&M chemical restriction. Chemical responsible should update chemical supplier for any change in chemical management policy.	
8.1.2	Declaration letter and agreement should be signed by chemical suppliers to confirm the quality of chemical purchase can meet the chemical management policy of factories.	
8.1.3	Factories should develop a routine on checking the quality of chemicals purchased. It is recommended that there is a specific system to secure that all components (raw materials and chemicals) used for products must fulfils H&M Chemical Restrictions.	
8.1.4	Purchased chemicals should be checked to ensure chemicals used in production	



	are up to standard.	
8.1.5	The quality grading of chemicals should be easily identified by labeling.	
8.1.6	Any unqualified chemicals and raw materials should be rejected and sent back to suppliers.	
8.1.7	All the quality records, such as test reports, CoA, inspection record, should be maintained and updated periodically.	

## 8.2 Quality Assurance - Raw materials and finished products

8.2.1	Factories should appoint a responsible person for product quality.	
8.2.2	Factories should develop a procedure to monitor and secure the quality of raw material and product according to H&M chemical restriction.	
8.2.3	Factories should closely communicate with raw material suppliers to ensure raw materials purchased are fulfilling the chemical management policy including H&M chemical restriction.	
8.2.4	Factories should update raw material supplier for any change in chemical management policy.	
8.2.5	Finished products should fulfill legal requirement and H&M chemical restriction, whichever is stringent.	
8.2.6	Factories should have comprehensive knowledge on the chemicals contains in their products, develop a bill of substances (BOS) and perform product risk assessment.	
8.2.7	Finished products should be check to ensure their products are up to standard	
8.2.8	All product testing must be conducted according to H&M test methods by accredited third party testing laboratories.	
8.2.9	Root cause analyses and corrective actions and preventive action should be implemented when non-conformities are found.	
8.2.10	All the documentations, e.g. test reports, risk assessment reports, corrective action plan, must be filed and updated regularly	



## Section 9

### Audit/Self-Assessment

9.1 A standard operation procedure of internal audit should be developed to ensure the best chemical management practice is in placed in factory.	
9.2 Internal audit should be carried out periodically (at least twice per year) to review and evaluate the chemical management system within unit.	
9.3 Audit record and corrective action plan should be maintained and recorded	

## Section 10

### Traceability and Transparency

#### 10.1 Chemical material flow

10.1.1 A chemical material flow diagram should be developed to show the flow of chemicals from purchase to use-up or disposal.	
10.1.2 The flow diagram should be reviewed and updated periodically.	
10.1.3 CIL and SDS should be available on site and allowed for inspection upon request.	

#### 10.2 Disclosure

10.2.1 Factories should disclose the chemical substances used and chemicals discharged to environment.	
--	--

## Section 11

### Preventive and Corrective actions

#### 11.1 Non-conformities, Corrective Action and Preventive Action

11.1.1 Factory should develop a monitoring process to identify non-conformities.	
11.1.2 Factory should define appropriate corrective action once non-conformity is found.	
11.1.3 Corrective action should be followed up by schedule.	
11.1.4 The record of non-conformities and its corrective action should be recorded.	
11.1.5 Factory should identify the opportunities of improvement in chemical	

management system.	
11.1.6 The preventive action should be setup.	

## 11.2 Emergency Plan

11.2.1 Factory should develop and implement an emergency response plan to handle the chemical accidents.	
11.2.2 The emergency response plan should be documented and opened to all employees	
11.2.3 An emergency response plan should include evacuation routes and procedures, alerting and response procedures, the emergency responsible personnel and communication details, etc.	
11.2.4 The emergency response plan should be updated and tested periodically.	

## Section 12

### Continual Improvement

#### 12.1 Identify the hazardous chemicals existed in processing

Factory should regular review the current production process, and evaluate the potential of hazardous chemicals generated or used

#### 12.2 Finding best alternatives

Factory should closely communicate with chemical suppliers to review their chemical formulas, and ask for better alternatives whenever is possible.

#### 12.3 Adopting the new technologies which are more sustainable

Factory should adopt more sustainable technology or chemicals to reduce the environmental impact from production.

## Appendix 1: Safety Data Sheet (SDS)

The SDS for a chemical product should have a structure and content as specified in Article 31 of REACH Regulation (EC) No 1907/2006<sup>7</sup> or in GHS<sup>8</sup>. The classification given in the SDS shall be done according to GHS, Dangerous Preparations Directive<sup>9</sup> (mandatory in EU until 1<sup>st</sup> June 2015) and/or CLP Regulation<sup>10</sup> (mandatory in EU from 1<sup>st</sup> June 2015). It shall be dated and contain at least the below headings.

**Complete SDS should include followings<sup>16</sup> sections:**

- 1) IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING;
- 2) HAZARDS IDENTIFICATION;
- 3) COMPOSITION/INFORMATION ON INGREDIENTS;
- 4) FIRST-AID MEASURES;
- 5) FIRE-FIGHTING MEASURES;
- 6) ACCIDENTAL RELEASE MEASURES;
- 7) HANDLING AND STORAGE;
- 8) EXPOSURE CONTROLS/PERSONAL PROTECTION;
- 9) PHYSICAL AND CHEMICAL PROPERTIES;
- 10) STABILITY AND REACTIVITY;
- 11) TOXICOLOGICAL INFORMATION;
- 12) ECOLOGICAL INFORMATION;
- 13) DISPOSAL CONSIDERATIONS;
- 14) TRANSPORT INFORMATION;
- 15) REGULATORY INFORMATION;
- 16) OTHER INFORMATION (*GHS – OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS*)

---

<sup>7</sup> REACH Regulation (EC) No 1907/2006 <http://eur-lex.europa.eu/en/index.htm>

<sup>8</sup> Globally Harmonized System of Classification and Labelling of Chemicals (GHS) [http://www.unece.org/trans/danger/publi/ghs/ghs\\_welcome\\_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html)  
A Guide to GHS <http://www.osha.gov/dsg/hazcom/ghs.html>

<sup>9</sup> Dangerous Preparations Directive 1999/45/EC on classification, packaging and labeling of dangerous preparations <http://eur-lex.europa.eu/en/index.htm>

<sup>10</sup> CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures <http://eur-lex.europa.eu/en/index.htm>

## Appendix 2: Chemical Inventory List (CIL)

Chemical Inventory List (CIL) is a list of all chemical substances that are manufactured, imported or used by the factory. It record down all the individual chemicals purchased and stored.

The inventory should include:

1. Responsible Name
2. Update dated
3. Chemical Product (commercial name)
4. Chemical Substances Name
5. Chemical identification numbers
  - a. CAS (Chemical Abstract Service) ,and / or
  - b. EINECS (European inventory of Existing Commercial Chemical Substances) numbers
6. Classification and labeling (hazard phrases) of the substance, such as Hazard Data [including Physical (H), Health (H) & Environmental (E)]
7. Concentration of Substances (w/w %)
8. Substance Use (description)
9. Chemical Supplier Name
10. Chemical Supplier Contact Email, name and address
11. Consumption (kg) of chemicals
12. Quality Regular Check
13. SDS Present
14. Others or Remark

Chemical Inventory List																
Responsible Person:																
Updated date:																
* P: Physical, H: Health, E: Environmental																
No.	Preparation Name	Chemical Product / Formulation Name (commercial name)	Chemical Substances Name	CAS no.	EINECS no.	Harzard Data			Concentration of substances (weight/weight, %)	Substance Use ( description)	Chemical Supplier Name	Chemical Supplier contact email	Consumption (Kg)	Quality regular check	SDS Present	Remarks
						P	H	E								
1																
2																
3																
4																
5																
6																
7																
8																
9																

## Appendix 3: Labelling OF CHEMICAL PRODUCTS

Labelling requirements, which should be in conformity with national requirements, shall cover 16 sections as followings:

- PRODUCT NAME / TRADE NAME
- IDENTITY OF THE CHEMICAL PRODUCT
- HAZARD PICTOGRAMS
- SIGNAL WORD
- HAZARD STATEMENT
- PRECAUTIONARY MEASURES & PICTOGRAMS
- FIRST AID STATEMENTS
- SUPPLEMENTAL INFORMATION
- NOMINAL QUANTITY
- IDENTIFICATION OF THE BATCH
- NAME, ADDRESS AND TELEPHONE NUMBER OF THE CHEMICAL SUPPLIER
- Expiry date

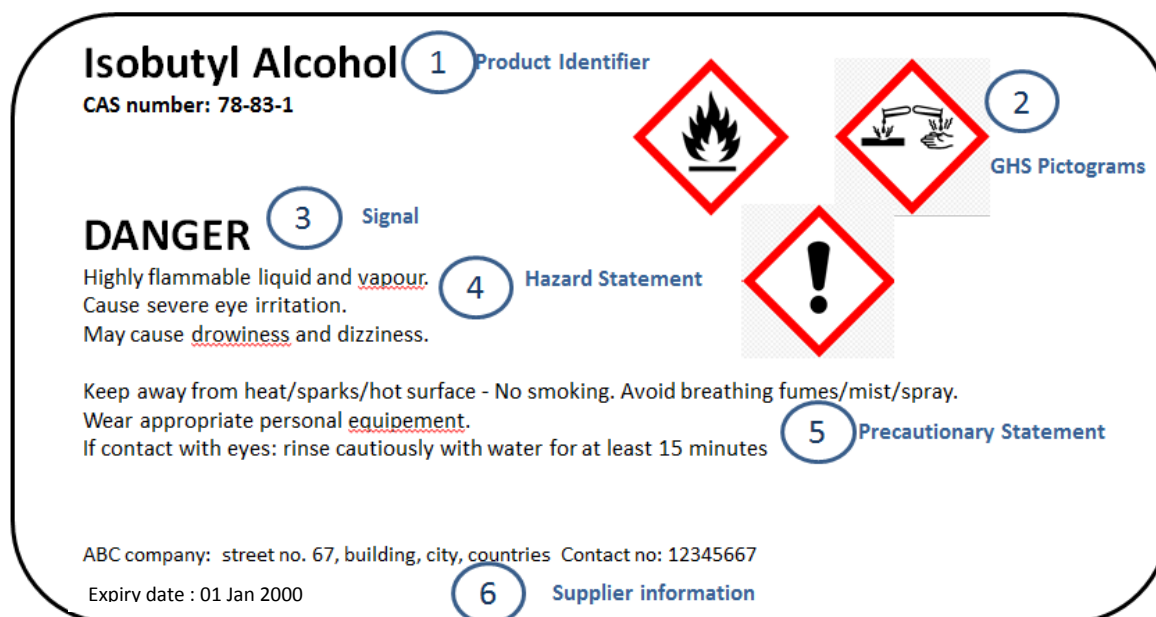


Fig 1. Example of a label including required elements according to GHS.

## APPENDIX 4: Incompatibilities by Hazard

CLASS	1	2	3	4	5	6	8

S Segregation is needed   
 ISOLATE ISOLATE   
 Keep Apart Keep Apart   
 Keep Together Keep Together

Table 1: Chemical storage compatibility chart

## Abbreviations

BCMP	Best Chemical Management Practices
BOS	Bill of Substances
CAS	Chemical Abstracts Service
CIL	Chemical Inventory List
CoA	Certificate of Analysis
EC	The European Community number
MR(Q)	Minimum Requirement – Quality department
MR (S)	Minimum Requirement – Sustainability department
MRSL	Manufacturing Restricted Substances List
MSDS	Material Safety Data Sheet
PDCA	Plan Do Check Act
PPE	Protective Personal Equipment
RSL	Restricted Substance List