QUALITY CONTROL OF CHEMICALS

November 2017
LEARNING OUTCOMES & RESOURCES

Learning Outcomes

• Gaining knowledge on how to conduct a Quality Control Process of chemicals.

Resources

• REMC Handbook

Workbook

Refer to complimentary exercises in your workbook.
Which problems can occur if no credible quality control process of incoming chemicals takes place?

Brainstorm as a group and take notes in your workbook, exercise (10-1).
Quality Control Process
M-RSL requirements for input chemicals

Push effect

Pull effect

Pull effect

RSL Requirements

M-RSL Requirements
QUALITY CONTROL PROCESS OF INCOMING CHEMICALS

1. Chemical purchase from approved supplier
2. Verify compliance of incoming chemicals through the supporting documents
3. Quarantine the chemical for testing against required specification
4. Test the chemical

- **Positive test result**
  - Reject chemical
    - Keep record and return to supplier
  - Find substitute chemical

- **Negative test result**
  - Approve chemical
    - Add record to chemical inventory
  - Receive purchase in warehouse
VERIFY COMPLIANCE OF INCOMING CHEMICALS

- Check the **SDS provided** by the chemical supplier for **completeness and correctness**.

- Ensure **SDS is following GHS standards**.

- **Cross check the chemicals for the RSL and MRSL risk** from the documentation provided such as SDS, TDS, COA, test reports and declarations.

- **Check the physical parameters** and strength of the product against a standard batch of the chemical. e.g. solid content, moisture content, ash content, melting point, boiling point, viscosity and settling behaviour.
TEST THE CHEMICAL AGAINST EXACT SPECIFICATIONS

• The received chemical should be kept in the **quarantine area (safely and protected)** until the test result is available.

• **Chemical testing** of the chemical against exact and agreed specifications.

• Wait for the **test result** before further processing the chemical.

• **Only process further if tests are passed.**

• **Reject if test was not passed.**

• **Return to the chemical supplier** with original PO no., Batch no., and date along with the reason for rejection.

• Ensure the **rejected chemicals do not come into contact with other chemicals**, and are kept separate before returning to the supplier.
QUIZ

Which check points for quality control of incoming chemicals can you think of?
QUALITY CONTROL CHECK POINTS

• Check the chemical purchased is what you have ordered.

• Ensure the chemical is purchased from an approved supplier.

• Ensure the documentation provided by the chemical supplier is correct.

• Check the format of the MSDS provided.

• Check the packaging and labelling meets all regulations.

• Verify the batch number against the physical drum batch number.

• Ensure the chemical is in quarantine until approved.

• Conduct chemical testing.
CHECK POINTS FOR MRSL COMPLIANCE

• Formulations are 3rd Party Certified /evaluated /tested and the respective certificate is provided.
  
  • e.g. bluesign®, T-ChIP®, GreenScreen®, Oeko-Tex®, GOTS®, REACh etc.

• Chemical is on the ZDHC positive list and ZDHC MRSL v.1.1 compliant. Supporting documents such as test reports, MSDS, TDS are provided.
QUALITY TRACKING RECORD

• Identify quality control check points, identify / state specific chemical requirements and check whether received material is in accordance with specifications provided.

• This should be followed in a systematic way.

• Factory should have a standard laboratory with relevant related testing facilities available and should be operated by technically qualified personnel.

• The testing report observed should be documented with the proper identification e.g. batch no., lot no, date, name of chemical etc.

• If received chemical does not match quality specifications during testing, it should be sent back to supplier and properly documented in factory records.

• The documented data will be helpful in analysing chemical product quality problems.

• Keep a track record.
## EXAMPLE TEST METHODS FOR QUALITY CONTROL OF CHEMICALS

<table>
<thead>
<tr>
<th>Character</th>
<th>Test Method</th>
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</thead>
<tbody>
<tr>
<td>Softeners</td>
<td>ASTM – D5237-05</td>
</tr>
<tr>
<td>Silicones</td>
<td>ASTM D5237-05</td>
</tr>
<tr>
<td>Sequestering agents Ca Cv</td>
<td>AATCC-149-2007</td>
</tr>
<tr>
<td>Sequestering agents Cu Cv</td>
<td>AATCC-168 2007</td>
</tr>
<tr>
<td>Wetting agents</td>
<td>AATCC 17-2005</td>
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<tr>
<td>Electrolyte stability of Reactive dyes</td>
<td>ISO 105 Z08</td>
</tr>
<tr>
<td>Dispensability of disperse dyes</td>
<td>AATCC 146-2006</td>
</tr>
<tr>
<td>Shade change due to metal for disperse dyes</td>
<td>AATCC 161-2007</td>
</tr>
<tr>
<td>Estimation of amount of silica in water</td>
<td>ASTM D859-10</td>
</tr>
<tr>
<td>Standard method for Ammonia Nitrogen in Water</td>
<td>ASTM D 1426-08</td>
</tr>
<tr>
<td>Standard method for Chromium in water</td>
<td>ASTM D 1687-02(2007)e1</td>
</tr>
<tr>
<td>Standard method for total Mercury in water</td>
<td>ASTM D 3223-02(2007)e1</td>
</tr>
</tbody>
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RELATIONSHIP BETWEEN GOOD QUALITY CHEMICAL MANAGEMENT AND PRODUCT SAFETY

MRSL Compliant Chemicals

- Sound Procurement Policy
- Chemical Risk analysis
- Store Management
- Full Traceability
- Worker Safety
- Control Disposal

Manage risky chemicals

Avoid waste, contamination & accidents

Product in line with legal & brand requirements
Your facility experiences a 4% chemical failure rate in final product from Heavy Metals. This means high financial losses for your facility.

Explain to your Factory Manager how the failure rate can be improved by installing a credible Quality Control Process and which steps are necessary.
Open To Questions
Each participant to feedback with one key learning from the session.

Take notes in your workbook, exercise (10-3).
Based on the GIZ REMC Toolkit; adapted by MADE-BY and STS on behalf of Rewe Group, Tchibo GmbH and GIZ in cooperation with develoPPP.de and the Partnership for Sustainable Textiles

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