

SMART Factories Programme Case Study 03:

Personal Protective Equipment (PPE) Usage and Safe Handling Effectiveness in a Yangon Handbag Factory

INTRODUCTION TO XINSHENG (MYANMAR) INDUSTRIAL COMPANY LIMITED

The XinSheng handbag factory, established in 2019 in Yangon, Myanmar, specialises in producing various handbag designs through several processes, including cutting, glueing, painting, sewing, quality control, and packaging. With a production capacity of 220,000–250,000 handbags monthly, the factory depends heavily on chemical use across its production lines. The workforce consists of 563 employees, with a notable majority (538) being female and 139 employees (approximately 25%) regularly handling chemicals. Chemicals are crucial in the glueing, painting, and storage processes, and effective chemical handling practices are essential to worker safety and regulatory compliance.



Despite the factory's efforts, pre-assessment practices lacked stringent handling and protective protocols, and the MADE Chemical Management Programme (August 2023) found several areas for improvement. The programme's goals included strengthening the factory's Chemical Management System (CMS) and implementing Change & Risk Management of Chemicals (CRMS) to ensure worker safety and regulatory adherence.

Assessment Findings by MADE

MADE's initial assessment revealed critical gaps in the handling and storage of chemicals, most notably around Personal Protective Equipment (PPE) usage. Key findings included:



Inadequate PPE Usage

Workers frequently transferred chemicals from large to small containers without using the necessary PPE, such as gloves, aprons, and safety shoes, leaving them vulnerable to chemical exposure, spillage, and related hazards.



Chemical Spillage

Instances of chemical spillage were observed during transfers, alongside improper cleaning practices, leaving workers' clothing soiled with paints and glues.



Expired Chemicals and Non-Product Output (NPO)

The factory had a limited understanding of NPO, which represents materials used in production but not included in the final product. NPO outputs include hazardous waste from unused, spilt, or expired chemicals, increasing both waste disposal costs and environmental impacts.

Workers reported **skin corrosion** from **chemicals, dizziness** from fumes, and a lack of awareness about risks due to inadequate PPE and training. Often, they only wore surgical masks, which did not protect against chemical odours, compromising their health and productivity.



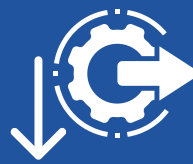
MADE's Recommendations and Interventions

To address these critical issues, MADE provided the following recommendations and facilitated training sessions to enhance safety, efficiency, and compliance.



Improving Chemical Handling Processes

MADE emphasised the importance of safe handling and transfer of equipment to minimise worker exposure risks. While PPE was necessary, MADE advised that it was a temporary solution and provided guidance on renovating the chemical transfer process to reduce hazards. As a result, the factory revamped its transfer methods, provided suitable PPE, and observed reduced spillage and exposure incidents.



Reducing Non-Product Output (NPO)

The MADE team identified key areas of NPO and trained factory staff on NPO calculations, encouraging waste reduction by minimising unnecessary chemical purchases and usage. The factory achieved a 3% reduction in NPO, resulting in a lower environmental impact and reduced operational costs.



Enhancing PPE Compliance

MADE addressed workers' discomfort and lack of knowledge around PPE through training on PPE usage and hazard awareness. The training covered which types of PPE were necessary for each stage of production and how to handle chemical hazards. Initially, compliance was low, but with consistent follow-up by MADE and the factory's Chemical Management (CM) team, all workers gradually began wearing PPE, understanding its importance for their health and safety.





Outcomes and Progress

MADE's recommendations yielded significant improvements in safety, cost savings, and regulatory compliance at the XinSheng factory.

Key Outcomes



Worker Safety and Awareness

Workers now consistently use PPE and adhere to safe handling procedures, minimising exposure risks and promoting a healthier work environment. Awareness training has empowered employees to recognise the hazards associated with chemical use and protect themselves accordingly.



Cost Savings through Waste Reduction

By reducing NPO and optimising chemical purchases, the factory lowered costs associated with overused and expired chemicals, resulting in substantial savings. The new handling equipment also minimised spillage, further enhancing operational efficiency.



Regulatory Compliance

With improved chemical management protocols, the factory has enhanced its compliance with regulatory requirements, particularly regarding chemical storage and worker safety standards.



The factory's effective response to MADE's recommendations has positioned it as a safer workplace, with these practices positively impacting worker health, financial stability, and regulatory adherence.





As a pregnant worker, I recommend that all factories using chemicals join the MADE programme. Awareness of chemical hazards is essential, especially for pregnant workers, to protect ourselves and prevent health risks. My employer now ensures all pregnant workers no longer directly handle chemical substances as soon as we find out we are pregnant.

Waddy Ayer Aung
Chemical Team Leader (Pregnant Worker)

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Insight

The XinSheng factory's collaboration with MADE exemplifies how targeted training and effective chemical management systems can greatly improve workplace safety, regulatory compliance, and cost savings in high-risk environments like chemical-intensive manufacturing. Through strategic interventions and a commitment to ongoing compliance, XinSheng has transformed its operations, establishing a model for safe manufacturing practices in Myanmar.

Notable Results



Reduced Spills & Worker
Exposure Incidents



Trained Staff to
Minimise Chemical Overuse



PPE Training
Boosted Compliance



Improved
Worker Safety & Awareness



Cost
Savings



Regulatory
Compliance



Co-funded by
the European Union

