

Adopting safer chemical management in the fashion value chain

Business case:

DEMCO Jeanswear, Tunisia

Context

As part of the regional EU-funded SwitchMed programme, the MED TEST III project supports industries in the Southern Mediterranean to improve their environmental performance and competitive advantage. Together with the Zero Discharge of Hazardous Chemicals (ZDHC) Foundation, a mission-driven multi-stakeholder initiative for the textile, apparel, leather and footwear industry, the United Nations Industrial Development Organization (UNIDO) has undertaken pilot projects in Egypt, Morocco and Tunisia to demonstrate the way forward for phasing out hazardous chemicals in the textile industry's value chain.

This project aimed to demonstrate and document the business case of implementing a sustainable Chemical Management System (CMS) in the textile-finishing industry in line with the ZDHC Guidelines. An initial training on ZDHC Sustainable Chemical Management and Wastewater Management for company staff was rolled out (2020-2021) targeting 37 production facilities in the three countries, followed by the launch of six industry pilot project (2021-2022), offering technical assistance to improve chemical and wastewater management systems in the production facilities. Additional 15 companies have been supported through training and capacity building actions, leading to the preparation of country roadmaps to extend the adoption ZDHC guidelines within the textile-finishing sector.

Company overview

Main production processes:

Manufacturing, washing, dyeing, special effects treatment and finishing of jeans

Number of employees: 500+

Number of staff trained: 10

Founded in 1991, DEMCO is a denim and knitwear manufacturer from Moknine, Tunisia, producing finished products for internationally renowned brands, such as PVH and Kantoor.

Improving chemical management systems, policies and safety procedures

At the beginning of the project, DEMCO had a well-established CMS in place with ISO 14001 and ISO 9001 certifications. However, not all workers had received complete training on sustainable chemical management including work instructions with safety measures, handling of chemicals, chemical labels, chemical hazards, use of Personal Protective Equipment (PPE), and insufficient refresher training sessions. Following the recommend course of action, DEMCO has now improved these procedures and internal training session's records have been made available to all concerned staff, including new employees.

DEMCO was already using a comprehensive inventory list for the chemicals they used. In collaboration with the company team, it was decided to update this list to comply with the ZDHC Chemical Inventory List (CIL) requirements. The ZDHC CIL template is an industry standard that lists all chemicals and/or chemical products that are used or stored in the facility and it helps suppliers to understand how to manage them and to track goals towards ZDHC Manufacturing Restricted Substance List (MRSL) Conformance. The ZDHC MRSL is a list of chemicals restricted from intentional use by manufacturing facilities during the production process in the textile, apparel, leather and footwear industry.

Furthermore, DEMCO already had an adequate Chemical Purchasing Policy. The project team provided some additional recommendations on how to be further aligned with the ZDHC Guidelines and requirements. Consequently, the procedure now clearly outlines the responsibilities for each task/action involved in purchasing chemicals for the factory.

“

Adopting a sustainable chemical management system isn't any more an option. It will not only benefit working conditions and the environment, but also better position us on the global market since it is now a requirement by several brands and certification bodies.

Caroline Grégoire
CSR Manager, DEMCO Jeanswar

”



Visit SwitchMed.eu

As part of the EU-funded SwitchMed programme, UNIDO demonstrates in the MED TEST III project pathways for industries in the Southern Mediterranean to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

This publication has been produced with the financial assistance of the European Union (EU) and SwitchMed co-funding partners. The contents of this publication are the sole responsibility of UNIDO and can in no way be taken to reflect the views of the EU.

SwitchMed is co-funded by:

Relationship with chemical suppliers and registration of chemicals on the ZDHC Gateway

At the start of the DEMCO project, 65% of their production facilities' chemicals were already registered on the ZDHC Gateway, the world's largest database of safer and innovative chemistry for the textile, apparel, leather and footwear industry. During the pilot project, seven new products were registered. Additionally, DEMCO's updated Purchasing Policy included a new chemical supplier, and all of their suppliers are listed on the ZDHC Gateway.

Unfortunately, there is no information available on how many chemical suppliers were contacted during the SwitchMed pilot project. According to the company's management, chemical formulators are resistant to change, which will take time. Supplier feedback has indicated that certification and registration costs are quite high.

Chemical products registered on the ZDHC Gateway		Chemicals suppliers on the ZDHC Gateway	
Total and %	New	Total	New
241 - 65%	7 (-50*)	64	0

* in the () data provided by the company in the self-declaration of the evaluation questionnaire v.s what indicated in the CIL

Substitution of high-risk hazardous chemicals

Substitution is one of the best solutions for reducing health and safety risks from chemical use and discharge. However, substituting chemicals requires time. Therefore, other actions that can further assist in the reduction of risks should also be taken into account and implemented, such as, better handling and storage conditions, reducing the quantities of chemicals stored in the factory, better monitoring of Wastewater testing, and better use of PPE.

During the pilot, the DEMCO team performed a risk analysis using a methodology with the following formula:

$$\text{Risk} = \text{Gravity} \times \text{Frequency}$$

This formula was established to assign a hazardous level score to each of their chemicals. The gravity score defines whether the product is registered on the ZDHC Gateway, and if so at which level. In addition, the frequency score is evaluated based on the use frequency, the stored quantity and the quality of available PPE for each hazard. The resulting priority list revealed several instances for substituting chemical products. Even with the high number of chemicals used in the different factories of DEMCO, a chemical risk evaluation was undertaken for all the chemicals listed on the CIL. The company team developed a proactive action plan that immediately started the substitution for more than ten high-risk chemicals and will continue for medium and low risk products.

The percentage of ZDHC certified chemicals have increased 80% annually on average, and in November 2022 98% of the chemicals used were in conformance with the ZDHC MRSL. So far, 14 chemicals have been substituted and a certified ZDHC Level 3 "Softener", a chemical used during the washing process, has been added to the CIL.

For more information contact:



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

United Nations Industrial Development Organization
Ms. Ulvinur Müge Dolun
Division of Circular Economy and Environmental Protection
Circular Economy and Resource Efficiency Unit
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
E-mail: u.dolun@unido.org Web: www.unido.org

Wastewater testing and conformity

Wastewater testing was not part of and not required during the pilot project. Still, it is an essential component of the ZDHC Roadmap to Zero Programme and is often requested by international brands independent of their involvement with the ZDHC Foundation.

DEMCO has an Effluent Treatment Plant (ETP) and follows the ZDHC Wastewater Guidelines and local regulations for wastewater testing. In the testing rounds, non-conformities related to the ZDHC Manufacturing Restricted Substances List (MRSL) were detected, and an action plan was developed with a Root Cause Analysis to determine the source of the non-conformity. DEMCO has added more Standard Operating Procedures (SOP) for monitoring their in-house ETP and also ZDHC-compliant SOPs for their wastewater treatment plant. They have increased the sampling points to better identify the exact step of water treatment that needs improvement in case of non-conformity. According to DEMCO, it is now easier for the ETP team to identify the root cause in case of any problem related to conventional parameters.

Brand relationship

DEMCO engaged in talks with the brand "Kontoor" following the completion of the SwitchMed pilot project. The company underwent a Brand Audit and, according to management, the project presented an opportunity to enhance their CMS within the factory. This improvement has proven beneficial during multiple audits, including achieving a Level 3 status on the Higg Audit. DEMCO is now exploring the possibility of obtaining the ZDHC Supplier to Zero Foundational Level. Supplier to Zero helps suppliers to realise their potential. It identifies areas of improvement in sustainable chemical management and reduces risks and costs associated with outdated practices.

“

This project provided us with a clearer vision for our chemical management, considering environmental, societal, and customer requirements. Choosing safer chemical options is critical to our sustainability strategy.

Hela Kerkeni
Sustainability Manager, DEMCO Jeanswear

”

Ø ZDHC

ZDHC Foundation
Oudezijds Voorburgwal 316-B
1012 GM Amsterdam, The Netherlands
E-mail: training@zdhc.org Web: www.roadmaptozero.com