



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Adopting safer chemical management in the fashion value chain

Business case: Atrefil, Morocco

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: Textile finishing, dyeing.

Number of employees: 45

Number of staff trained: 3

Established in 2001, ATREFIL specializes in yarn dyeing and is known for meeting customer expectations, fulfilling internal and external commitments, reducing costs, and continuously improving its performance. To evaluate the implementation of its quality management system, ATREFIL sets annual targets for all the indicators. The company's quality policy links strategic management with day-to-day operational management.

Improving chemical management systems, policies and safety procedures

At the start of the project, ATREFIL did not have any policies or strategies in place for managing chemicals, pollution, wastewater, or the environmental impact of its activities. Additionally, there was no Effluent Treatment Plant (ETP) to treat the wastewater generated by the factory.

Furthermore, different departments and teams within the company were using various inventory lists for the chemicals in use. To address this, ATREFIL was advised to use the official ZDHC Chemical Inventory List (CIL), which is now being used by all team members.

The lack of an environmental and chemical management strategy or policy at ATREFIL can partially be explained by the absence of interest from stakeholders and brands in improving the company's chemical management. A sound management of chemicals enables companies to manage risks, meet a growing demand for sustainably produced goods, and improves the protection of workers. The company's management is committed to implementing corrective actions and taking steps to improve their chemical management, and the team from ATREFIL participated in all training sessions related to chemical management and wastewater treatment.

To improve safety, several actions were suggested during the pilot. All products, especially those classified as dangerous, are now handled with the appropriate level of care. Staff have received training on safe handling practices for products in stock or on the work floor. A storage separation system has been implemented for hazardous products. Finally, staff were trained on why personal protective equipment (PPE) is important and why it should be used. It is now mandatory to use personal protective equipment (PPE) when handling chemicals.

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Our goal from the experience made with ZDHC is to completely ban harmful substances from our production

Abdellah KHALIL,
Production Director, ATREFIL

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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:



Generalitat de Catalunya
Departament d'Acció Climàtica,
Alimentació i Agenda Rural



Agència de Residus de Catalunya



Italian Development
Cooperation
Ministry of Foreign Affairs
and International Cooperation

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

ATREFIL has created an action plan to encourage their chemical suppliers to register their products on the ZDHC Gateway. The ZDHC Gateway - Chemical Module is the world's largest database of safer and innovative chemistry for the textile, apparel, leather and footwear industry. ATREFIL has now successfully replaced two high priority chemicals with products that are already registered on the ZDHC Gateway and therefore conformant to the ZDHC Manufacturing Restricted Substances List (MRSL). This is a list of chemicals restricted from intentional use by manufacturing facilities during the production process in the textile, apparel, leather and footwear industry. Additionally, ATREFIL has updated their chemical purchasing policy to align with the ZDHC requirements and one new supplier from Morocco has also joined on the ZDHC Gateway. However, ATREFIL has noted that the main obstacle for suppliers to make the change are the additional costs.

Chemical products registered on the ZDHC Gateway		Chemicals suppliers on the ZDHC Gateway	
Total and %	New	Total	New
11 – 21%	0	3	0

Substitution of high-risk hazardous chemicals

Several meetings were held with ATREFIL to better understand their challenges and explain the chemical risks associated with their current inventory. Substituting chemicals is a best practice solution for reducing health and safety risks, but this process takes time. Therefore, it is essential to consider and implement other actions which further reduce risks, like improving handling and storage conditions, reducing the amount of chemicals stored in the factory, better monitoring wastewater testing, and the correct use of PPE.

The ATREFIL team also received training to perform a risk evaluation of each chemical used in the factory. During the pilot, the ATREFIL team performed a risk analysis using a methodology with the following formula:

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

ATREFIL was able to estimate a risk score for each of their chemical products, considering information such as product hazard, registration on the ZDHC Gateway, test reports, and frequency/quantity used.

After this activity, ATREFIL established a hierarchy of all chemicals and set a priority list for substitution. They developed an action list requesting suppliers to share their engagement with the ZDHC Roadmap to Zero and register their chemical products on the ZDHC Gateway.

Wastewater testing and conformity

Although not mandatory for the pilot project, wastewater testing is a crucial component of the ZDHC Roadmap to Zero Programme. Many international brands request it, even if they are not associated with the ZDHC Foundation.

Unfortunately, the ATREFIL production facility does not have an ETP and has never tested its wastewater in accordance with the ZDHC Wastewater Guidelines. However, they did provide wastewater test reports to demonstrate compliance with local regulations.

After the audit, a closing meeting was held to communicate the audit findings and recommendations to ATREFIL. The ATREFIL team was receptive to the results and has already begun implementing an action plan, which includes evaluating the financial feasibility of installing an ETP in their facility. As a further incentive, two ATREFIL team members attended an ETP training session in Morocco, which was part of the project. During the training session, they learned the importance of establishing an in-house monitoring system to evaluate ETP performance.

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The project established a complete chemical inventory. It implemented a purchasing procedure based on ZDHC standards, improved chemical management, and enhanced internal safety measures.

Abdellah KHALIL,

Production Director, ATREFIL

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