

Adopting safer chemical management in the fashion value chain

Business case:

Alroubaia Fourtex Textile Co, S.A.E, Egypt

Context

As part of the regional EU-funded SwitchMed programme, the MED TEST III project supports industries in the Southern Mediterranean to improve both 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 for implementing a sustainable Chemical Management System (CMS) according to the ZDHC Guidelines in the textile-finishing sector. An initial training (2020-2021) on ZDHC Sustainable Chemical Management and ZDHC Wastewater Management for company staff targeted 37 production facilities in the three countries. This was followed by the launch of six industry pilot projects (2021-2022) that provided technical assistance to improve chemical and wastewater management systems in the production facilities. To expand the adoption of the ZDHC Guidelines throughout the textile-finishing sector of the region, an additional 15 companies have received support through training and capacity-building actions.

Company overview

Main production processes:

Spinning, Weaving, Bleaching & Dyeing, Special Chemical Finishing of Fabrics.

Number of employees: >4000

Number of staff trained: 6

Alroubaia Fourtex Textile Co is a leading producer of eco-friendly denim and flat fabrics in the region. The company started operating in Syria in 1978, with an annual production capacity of 1 million meters. Over the years, the company has expanded their operations to Egypt (1998), and Turkey (2018). Today, with two fully integrated mills in Egypt and Turkey, the company has a combined production capacity of 120 million meters per year.

Improving the chemical management system, policies and safety procedures

The ZDHC Foundation's systematic approach towards safer chemical management at facilities identifies and defines different actions needed to control each stage of production: input, process, and output. The chemical purchase policy is one of the first steps to preventing non-controlled chemicals from entering the production process. Such a policy outlines the commitment of the facility's leadership and includes the adoption of practices and procedures for purchasing, transparency and traceability of the chemicals used.

Before joining the project, Alroubaia already had a Sustainable Purchasing Policy in place, which governed all company purchasing processes, including the purchase of chemicals. However, the chemical purchasing policy needed to be fully aligned with the ZDHC guidelines and was consequently amended during the pilot to meet the ZDHC Technical Industry Guide (TIG). The revised policy now provides full description on the evaluation procedure for requested chemicals, considering their different levels of chemicals registration on ZDHC gateway. Furthermore, the Standard Operating Procedures (SOP) for chemical management were reviewed, adding ZDHC requirements and chemical purchasing procedures.

Like the chemical purchasing policy, Alroubaia already had a Chemical Inventory List (CIL) before joining the project. That CIL was reviewed, particularly with regard to the Material Safety Data Sheet (MSDS), and details were added in line with ZDHC recommended template. With a proper CIL in place, the company is now aware of which chemicals are used and stored at the facility, the risk level of each chemical product is defined and, consequently, a roadmap was created to reduce risk. Actions ranged from decreasing the stock of chemicals stored, substituting high-hazard chemicals, assuring the availability of proper Personal Protective Equipment (PPE) and risk management plans to mitigate any hazards.

Results from the actions taken are reflected in cleaner output from the facility, which is controlled through the wastewater parameters. During the pilot, the company developed their SOP for the Effluent Treatment Plant (ETP). Together with the respective monitoring plan the company can now periodically evaluate their performance.

Investing in the capability of company employees to move towards safer chemical management is crucial for successfully implementing the ZDHC Guidelines. Through the SwitchMed demonstration project, the company team received trainings on different topics related to chemical management, such as the Introduction to Chemical Management, the ZDHC Top 10 Issues & Best Practices Training, and Wastewater Management Training. Training was provided by UL; Accredited ZDHC training provider and reached six industry professionals, attaining 17 ZDHC certificates.



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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.

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

A reasonably high percentage of chemicals used by Alroubaia were already registered on the ZDHC Gateway, a world-renowned database of safer chemistry for the textile, apparel, leather and footwear industry. During the pilot project, Alroubaia contacted 12 chemical suppliers to request data sheets of chemicals not yet registered on the ZDHC Gateway but still in use in the facilities.

Throughout the project, nine of the contacted chemical suppliers reacted to Alroubaia's request and started with the registration process for adding their chemical products on the ZDHC Gateway. All chemical products that are on the ZDHC Gateway are in conformance with 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. To proof MRSL conformance, ChemCheck reports for each chemical product were created on the Gateway. The ChemCheck is a report that can be generated for every MRSL conformant product that chemical suppliers publish on the ZDHC Gateway. It is used to assure customers that a chemical product meets the ZDHC MRSL requirements. For those suppliers that declined to follow the ZDHC requirements by registering the chemical products on the ZDHC Gateway, Alroubaia defined a roadmap to substitute the noncomplying chemicals.

Although all the chemical suppliers already had products registered on the ZDHC Gateway, it took effort at the beginning of the project for Alroubaia to persuade those suppliers to register all chemicals on the ZDHC Gateway. However, over time, and after the Alroubaia team exchanged the experience with the suppliers concerned, most of them understood the importance of providing safer chemicals and cooperated with the Alroubaia team on the matter.

By the end of the SwitchMed pilot project, the percentage of ZDHC-certified chemicals has slightly increased, with **20 new chemical products registered on the ZDHC Gateway.**

Chemical products registered on the ZDHC Gateway		Chemicals suppliers on the ZDHC Gateway	
Total and %	Substituted	Total	New
191 – 75%	2	16	0

Substitution of high-risk hazardous chemicals

Substitution is a best practice solution for reducing health and safety risks from chemical use and discharge. However, substituting chemicals requires time. Therefore, other actions that can further assist in reducing risks should also be considered 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. Alroubaia Substitution of high risk-hazardous chemicals, as well as other actions to protect workers from exposure, were covered during the training and adopted by Alroubaia into their business practices.

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

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

For more information contact:



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Keeping up with the fashion industry's requirements for sustainable products, we are committed to investing in eco-friendly solutions to conserve water, energy, and materials to protect the environment for the next generations.

Ghayth Miro,
Total Quality Director

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This formula was established to assign a hazardous level score to each of their chemicals. The gravity score confirms if the product is registered on the ZDHC Gateway and, if so, at which level. In contrast, 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 of substituting chemical products. Although the substitution process was initially problematic for Alroubaia, mainly due to the higher cost for alternative chemicals, Alroubaia has, to this date, **substituted two hazardous chemicals, and phased out 94 chemicals** from their processes according to the adopted purchasing policy and the ZDHC MRSL Guidelines.

Wastewater testing and conformity

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

Alroubaia participated in the wastewater testing rounds, conducting two complete ZDHC wastewater analyses. Some non-conformities were detected from the first analysis. With guidance from the pilot project consultants, corrective actions were defined, and after their implementation, a second analysis was conducted to confirm the results. Through the analysis, the importance of a systematic approach in defining the causes of deviation in wastewater parameters became evident. In case of Alroubaia the root cause originated from the sanitary pipeline that was discharging to the ETP. The company quickly took ad-hoc corrective actions and replaced the hand soap, which was the cause of the non-conformity. In the long-term, they plan to split the sanitary pipeline from the industrial wastewater pipeline.

Brand relationship

One important driver for companies to embark on a CMS is their business relationships, particularly with their clients.

Alroubaia did not pursue ZDHC implementation as it was not requested from their clients. Yet, they had the motivation to establish the system to be prepared should it become a prerequisite with any existing or future clients. By the end of the pilot, it came to the attention of Alroubaia team that most of the international brands are asking for ZDHC requirements, and consequently the pilot has improved the company's relation with brands. The company recorded an increase of 1% in number of their clients.

Ø ZDHC

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