



FIVE STEPS TO DETOX

Ecological Services for Sustainable

Chemical and Supply Chain Management



TABLE OF CONTENTS



” *The twenty-first century is bringing more and more focus on chemical safety.* “

Keith Williams, President and CEO UL

UL is a globally leading and independent company for product safety and certification. For more than 120 years, the company has been developing standards as well as innovative solutions to help ensure the safety in the world in which we live and work. UL was founded in 1894 as Underwriters Laboratories in the United States.

Our business area UL Consumer & Retail Services (CRS) supports manufacturers and retailers in all aspects of the supply chain and manufacturing process – from raw materials to sales transactions – and helps them manage their risks and supply products that are safe, socially responsible and in line with industrial standards.

CHALLENGES FOR RETAILERS AND MANUFACTURERS

In today's global markets, more and more suppliers and manufacturers from different countries offer a continuously growing selection of raw materials and goods. In this way, the structures of the textile industry grew strongly in the last few years and the supply chains have correspondingly become more complex.

With an increasing consciousness for environmental concerns, health, security and sustainability in global supply chains, an increasing number of organisations and consumers are demanding increased transparency and more information about where and how products are manufactured and what ingredients they contain.

The textile and retail industries are under increasing pressure to minimize their effects on the environment and to improve the sustainability of their supply chain.

An increasing number of companies is therefore focussing on reducing the negative effects on humans and the environment throughout their value chain. Often it is a lack of knowledge and support that prevents the implementation of an effective Detox strategy and suitable management systems.

The ZDHC (Zero Discharge of Hazardous Chemicals) program launched in 2011 is the industry's reaction to the Greenpeace Detox Campaign launched that same year and is intended to offer companies a guideline and support in the implementation of sustainable chemicals management.



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ZDHC
Program



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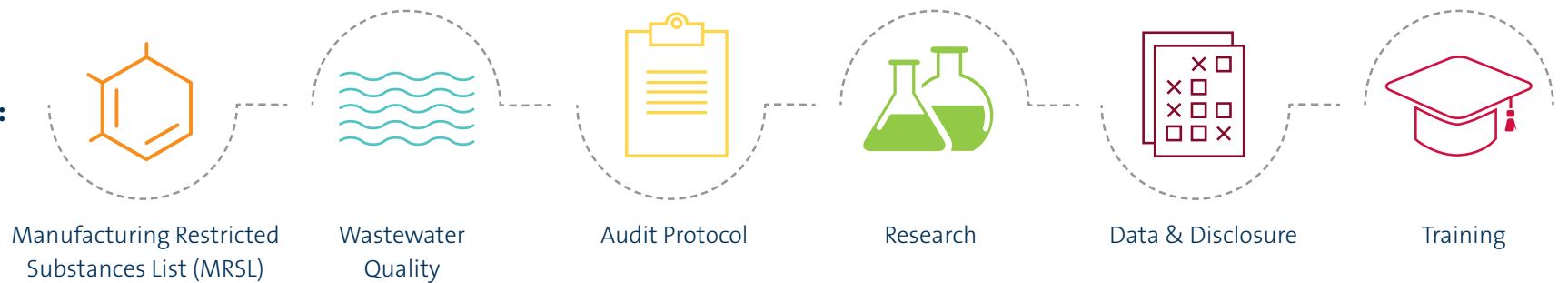
THE ZDHC PROGRAM: A COMPREHENSIVE APPROACH FOR SUSTAINABILITY IN THE VALUE CHAIN

The use and the leakage of dangerous chemical substances in the production of textiles and shoes harms waterways, plants and animals, as well as humans. The ZDHC program is a global cooperation of more than 50 companies that are jointly looking for a safe, sustainable chemicals management along the entire value chain. The goal of the initiative is the complete removal of dangerous chemicals from the

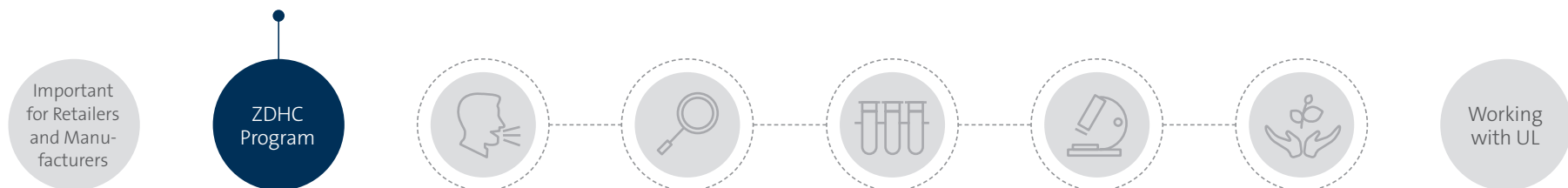
textile production. The focus of the ZDHC program is on the limitation and the exchange of certain substances in the production process and the verification of the waste water quality. Furthermore, the measures include the creation of an audit protocol that is intended to ensure the consistent environmental verification throughout the entire supply chain and the joint use of the test results.

The ZDHC research list serves to identify prioritized chemicals and to initiate measures leading to their substitution. Further areas of focus are the development of standards for synchronised data collection and reporting as well as training programs for brands, chemical suppliers, manufacturers and retailers on the topic of chemicals management.

THE ZDHC ROADMAP:



Leading the textile, leather and footwear industries towards zero discharge of hazardous chemicals



THE ROLE OF UL IN THE ZDHC PROGRAM

In April 2017, UL joined the ZDHC program as an official participant and supports both manufacturers and suppliers through wastewater tests in seven provisionally ZDHC-accepted labs. UL provided further support by running tests and conducting audits, providing management services and software tools that are used in the planning and implementation of sustainable processes – today they are accepted by NGOs and other entities.

In addition, UL is accredited by the ZDHC Foundation as an official provider of advanced training measures in the textile and shoe industry. The advanced training consists of five main topics:

- **Introduction in chemical management**
- **Chemical dangers and risk assessment**
- **ZDHC MRSL (Manufacturing Restricted Substances List) and Best Practices for Technical Data Sheets (TDS)**
- **Storage of chemical and personal protective equipment (PSA)**
- **Minimization of environmental effects**

In order to support the industry in its challenges relating to chemicals management, UL experts conduct the training in the respective local languages while using relevant, practical examples.

In the [ZDHC Academy tool](#), participants can register for the UL advanced training seminars.

”

This partnership will be of fundamental importance to drive all of us toward a new sustainable culture based on a chemical management approach for the benefit of consumers, workers and the environment.

“

Elisa Gavazza, Global Lead for Chemicals Management, UL CRS

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GET READY FOR THE **FIVE STEPS TO DETOX**

1

Inform, Plan and Communicate



2

Supply Chain Transparency



3

Chemicals Management



4

Testing and Auditing



5

Correction and Prevention Measures

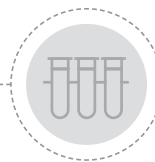


At UL, we know what challenges companies face if they want to enable the ZDHC/Detox goals. Throughout the process, we will support you through the provision of the most diverse services. First off, here are some fundamental recommendations:

- **Plan a long-term sustainable strategy.**
- **Develop a proactive stance and demonstrate your willingness to invest in the future of your company by implementing sustainable supply chain practices.**
- **Communicate your goals throughout all levels of the supply chain and leave no one behind.**
- **Initially select the most important factories (or at least those with the highest risk factors) for the Detox measures.**
- **Bring your key suppliers on board and create a random sample strategy. This will help you in both the scheduling and budgeting process.**

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DETOX

Action Plan with UL

Repeat process
to see
improvement

Chemical
Inventory
Audits and
Consultancy

MRSL
(Manufacturing
Restricted
Substances List)
Testing

Customized
Training

Wastewater
and Sludge
Testing

Review
Findings

STEP 1 INFORM, PLAN AND COMMUNICATE

As an official ZDHC member and accredited provider of advanced training measures, UL can comprehensively assist you in the development of a Detox action plan.

Consulting and advanced training

UL offers consulting services as well as current information that you require in order to adhere to the continuously evolving safety requirements for consumer products. We monitor the developments of new laws and standards on both European and national levels and support you in terms of technical issues, chemical requirements and compliance demands.

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STEP 2

SUPPLY CHAIN TRANSPARENCY

To fulfil the ambitious ZDHC/Detox requirements – or to even just understand how far your company is from fulfilling them – it is imperative to get a closer look at the supply chain. Only then improvements can be identified, corporate guidelines be developed, and alternative solutions be processed.

Factory audits

UL offers audits for a thorough assessment of the supply chain. We audit the quality control processes and production capacities of a facility to determine any possible effects that the ZDHC strategy can have on product quality, the processes or the capacities in order to assess if long-term continuous quality can be ensured.

Software tools

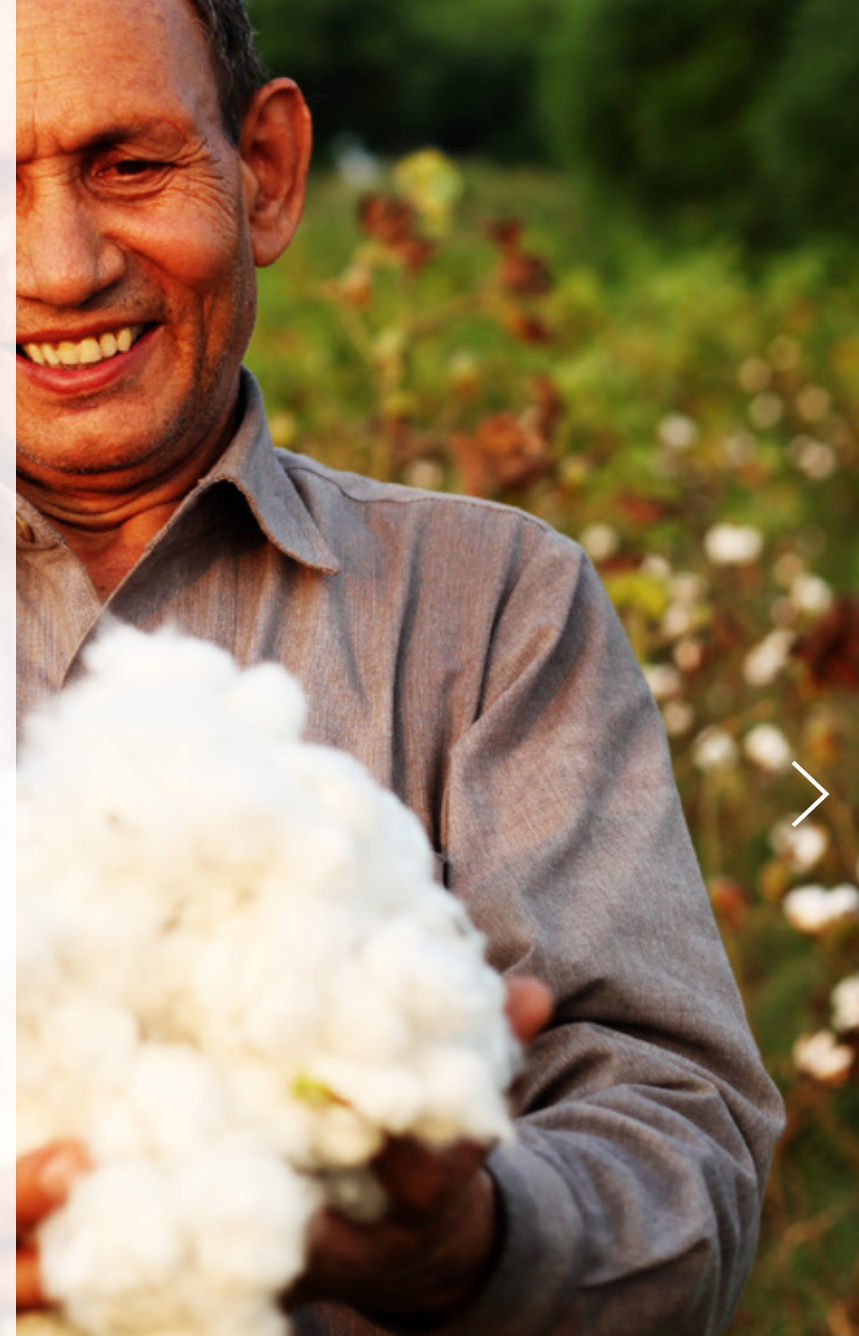
The UL PURE® software tools enable an efficient data collection, analysis and reporting regarding the supply chain and enable a simple and transparent management of the supply chain.

Environmental audits

The audits are performed by specially trained UL social partners and focus on the most important environmental components:

- Environmental management system
- Management of air, water, energy and greenhouse gases (THG = Treibhausgase)
- Wastewater / wastewater management
- Disposal of industrial and hazardous wastes
- Contaminated ground/soil and ground water contamination
- Land use and biodiversity
- Planning of emergency measures and environmentally-related emergency measures
- Training diversity

The understanding gained can be used to compile a roadmap that enables the transfer from the basis compliance to top performance.



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STEP 3

CHEMICALS MANAGEMENT

A chemicals management system is a systematic approach to procurement, storage, usage and recycling of chemicals within a system or plant. The chemical experts at UL can support you in all aspects of chemicals management – from the development of a list of the restricted substances, the inventory of chemicals and on to the implementation of a suitable test program that takes the entire supply chain into consideration.

It is important to ensure that trained chemical product managers are available on site – an often-overlooked component of an effective management system.

Verification of the chemical products inventory

One of the key components of a chemical product management system is the existence of a chemical product inventory in the factory. A technical verification of the chemical products inventory and the safety data sheets (MSDS) identifies chemicals to be avoided and standardises the raw materials management. In addition, communication programs are being developed for dangers that demonstrate the correct handling to employees as well as provide information that contributes to the retention of a safe workplace environment.

Development of a restricted substance list (RSL)

UL supports you in compiling a RSL as well as implementing it throughout your supply chain to ensure the conformity with the respective provisions.

Other chemicals management services

- Development of test programs for raw materials and finished goods within the entire supply chain
- Standardisation of the raw material and chemical approval process
- Creation of supplier selection criteria
- Chemical auditing of production sites

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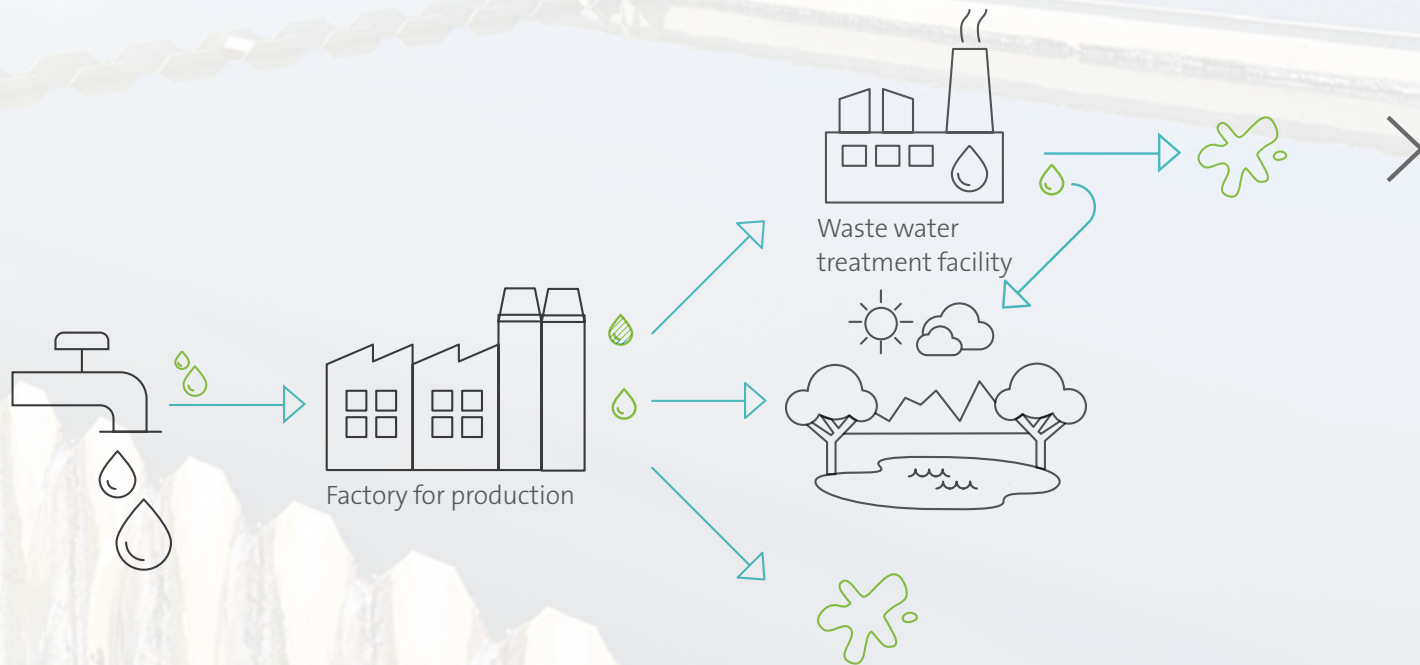
STEP 4

TESTING AND AUDITING



Water in textile manufacturing

-  **Incoming water** supplied to a manufacturing process
-  **Untreated raw wastewater** from the direct or indirect discharge from the system
-  **Treated wastewater** that can be reintroduced to the environment
-  **Sludge**, a residual product from the treatment of urban and industrial wastewater



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STEP 4

TESTING AND AUDITING

UL wastewater testing

The testing of wastewater requires specific knowledge, experience and the corresponding equipment. The correct sampling is the first phase of the analysis process and has great significance to the assessment of wastewater quality as per the specific technical standards of the ZDHC wastewater regulations.

UL was temporarily accepted by ZDHC for the wastewater and sewage sludge analysis via the ZDHC Gateway Wastewater Module. Wastewater tests, which are conducted by UL laboratories in Europe and in the Asia-Pacific region, determine the safety measures against the use of prohibited and high-risk chemicals.

For the reliability of the analysis results, UL has developed specific processes and equipment from the initial wastewater sample to the delivery of the result. The process measures executed by UL are implemented by specially trained employees.

The wastewater assessments and the protocols, for which local tests are conducted, are aligned with the ZDHC requirements.



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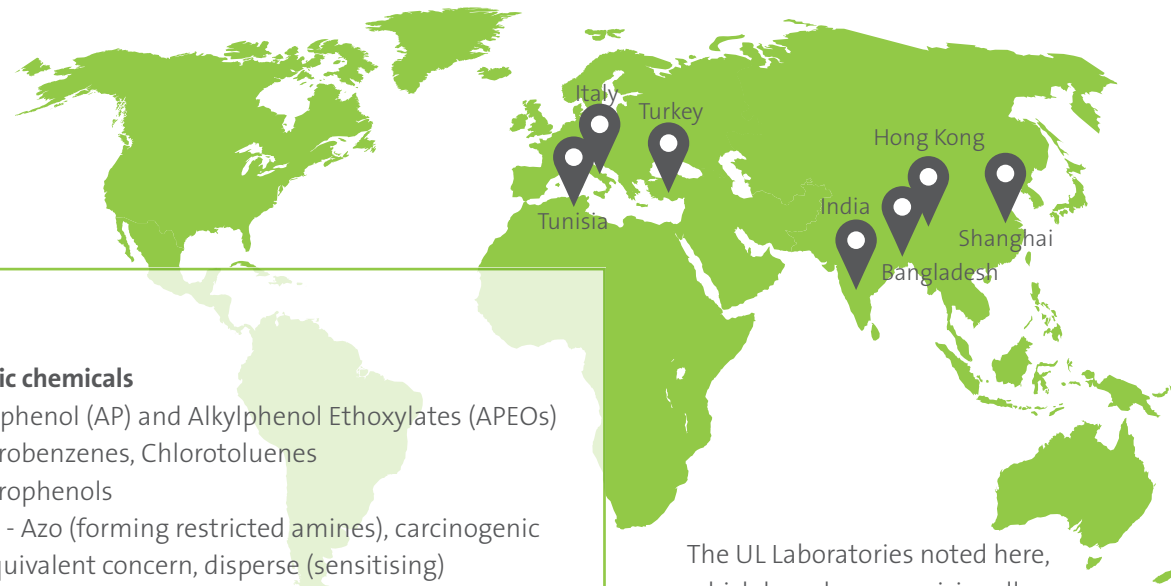
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Wastewater test parameters

Conventional parameters

- Temperature
- TSS
- COD
- Total-N
- pH
- Colour
- BOD5
- Ammonium-N
- Total-P
- AOX
- Oil and Grease
- Phenol
- Coliform (bacteria/100 mL)
- Persistent foam

Anions

- Cyanide
- Sulphide
- Sulphite

Metals

- Antimony
- Arsenic
- Silver
- Cadmium
- Chromium total
- Chromium (VI)
- Cobalt
- Mercury
- Nickel
- Lead
- Copper
- Zinc

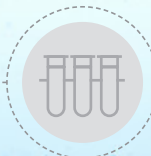
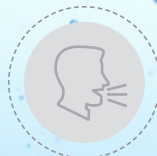
Organic chemicals

- Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs)
- Chlorobenzenes, Chlorotoluenes
- Chlorophenols
- Dyes - Azo (forming restricted amines), carcinogenic or equivalent concern, disperse (sensitising)
- Flame retardants
- Glycols
- Halogenated solvents
- Organotin compounds
- Perfluorinated and Polyfluorinated Chemicals (PFCs)
- Ortho-Phthalates
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Volatile Organic Compounds (VOC)

The UL Laboratories noted here, which have been provisionally accepted by ZDHC for the wastewater and sewage sludge analysis, are in the position to implement tests for ZDHC and to upload the results to the Gateway Wastewater Module.

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STEP 4

TESTING AND AUDITING

Additional focus points for UL wastewater tests

For all on-site wastewater assessments, UL does not only test the wastewater for the existence of chemicals and dangerous substances, but also assesses the wastewater and chemical management to identify the associated risks. The tests are performed by specially trained UL social auditors and focus on the following components:

- **Management-Systems**
- **Environmental management systems and adherence to environmental regulations**
- **Existence of suitable treatment systems**
- **Water consumption**
- **Quality and monitoring**
- **Emergency response**
- **Advanced training**

Detailed analyses help in the identification of improvement areas and clean-up strategies.



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STEP 5

CORRECTION AND PREVENTION MEASURES

Supported by a centralised data management system, we support you in the administration of comprehensive supply chain risk management programs and in the implementation of correction and prevention measures, for example:

- **RSL implementation planning for the entire supply chain**
- **Training of employees and suppliers in relation to the responsible procurement of raw materials and production processes**
- **Sustainability services**
- **Substitution of dangerous chemicals through more sustainable alternatives**



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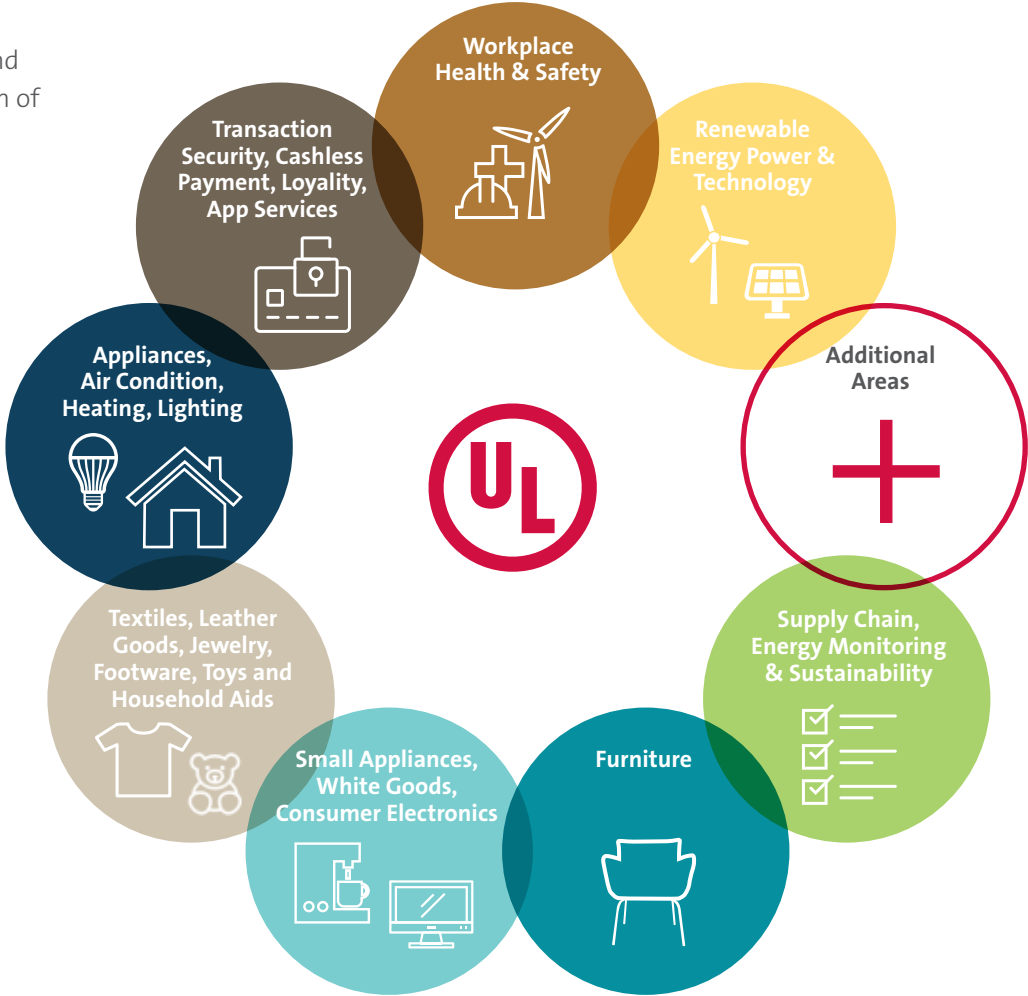
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BENEFIT FROM OUR UNIQUE EXPERIENCE

Services for the retail industry

UL offers manufacturers and the retail industry flexible solutions to quickly and safely introduce quality products to global markets. We offer a broad spectrum of services that are aligned to the most important challenges of the industry:

- Responsible sourcing and CSR reporting
- Supply chain management
- Quality assurance
- Chemicals management
- Verification of marketing statements
- Brand protection
- Support for compliance requirements
- Global market access
- Cyber security
- Payment security and mobile payments
- Process management for more sustainability
- Product and production tests
- Private label services



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LET'S GET STARTED

Contact us today writing to: **Apparel@ul.com**
or visit our website **UL.com/CRS**

