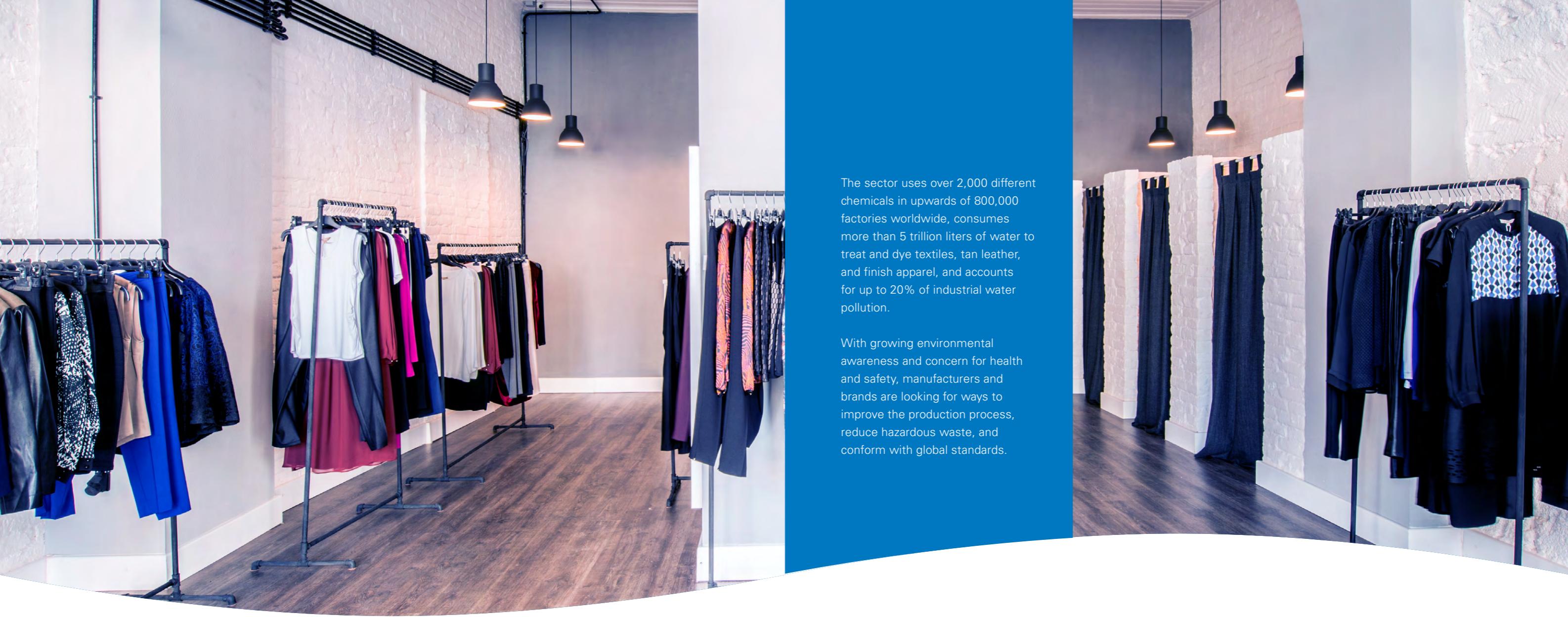


Building sustainable apparel & footwear supply chains

Your investment. Our commitment.





Embracing the changing sustainability landscape

Today, the global clothing and textile industry is worth approximately US\$3 trillion, representing nearly 2% of the world's GDP. It produces around 80 billion new garments every year, and employs about 60 to 75 million people. The industry is also the second most polluting in terms of overall environmental impact (after oil) and clean water (after agriculture). And, as the market has grown to unparalleled heights, it has also created an equally unparalleled increase in waste production.

The sector uses over 2,000 different chemicals in upwards of 800,000 factories worldwide, consumes more than 5 trillion liters of water to treat and dye textiles, tan leather, and finish apparel, and accounts for up to 20% of industrial water pollution.

With growing environmental awareness and concern for health and safety, manufacturers and brands are looking for ways to improve the production process, reduce hazardous waste, and conform with global standards.



APPAREL & FOOTWEAR INDUSTRY: THE WORLD'S MOST INTENSIVE AND RESOURCE INTENSIVE SUPPLY CHAINS.



 >60 million people employed

 5 trillion liters of water  2,000 chemicals

 800,000 factories worldwide  20% of industrial water pollution

Sources: <https://cleanclothes.org/resources/publications/factsheets/general-factsheet-garment-industry-february-2015.pdf>

TÜV Rheinland: Charting a course to sustainability

The apparel and footwear supply chain is long and complex. It stretches from retailers, brands and agents, to factories that cut and sew material, to subcontractors and dyeing houses, and all the way to chemical suppliers.

The sustainability challenges are often exacerbated by a lack of harmonized and accepted standards and inconsistent local regulations. Multiplied by widely different understandings of what constitutes sound chemical management, and

frequently hampered by a lack of knowledge regarding substitution of hazardous chemicals.

Add inadequate access to a consistent supply of cleaner, recyclable chemicals across geographically dispersed production sites, and the sustainability equation becomes even more difficult to solve.

Stakeholders in many of the world's best-known apparel design, manufacturing and retail businesses

are turning to TÜV Rheinland for help on their sustainability journey. Designed and delivered by industry experts, our end-to-end sustainability portfolio enables businesses to quickly and effectively align themselves with industry standards.

And, just as importantly, partnering with TÜV Rheinland positions enterprises to respond to the constantly changing sustainability landscape faster and more efficiently than competitors.



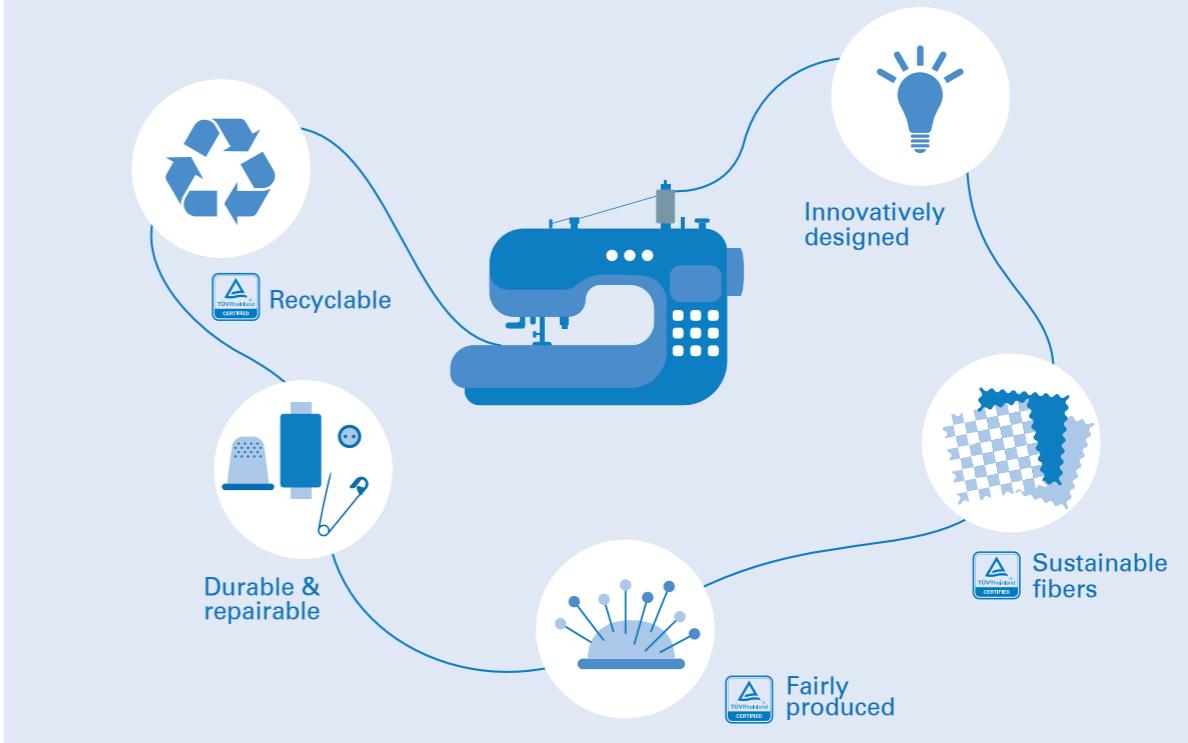
The one-stop solution to keep track of chemicals

Since Greenpeace launched its DETOX campaign in 2011, the apparel industry has made progress towards eliminating all releases of hazardous chemicals from their supply chains and products. Three industry associations – Zero Discharge of Hazardous Chemicals (ZDHC), Sustainable Apparel Coalition (SAC) and the Outdoor Industry Association Chemical Management Group (OIA CMWG) – are working to protect consumers, workers, and the environment.

There are also regulations/legislations, such as REACH and (EC) No 850/2004 on persistent organic pollutants (POP) in the European Union AND California Proposition 65 in the USA. For apparel organisations, the quest for sustainability starts with training staff – giving them a detailed understanding of what is involved in achieving sustainability. Next comes documenting existing processes against industry benchmarks. That is followed by validation.

Drawing on our in-depth industry experience, an excellent reputation and a truly global presence, TÜV Rheinland has developed an impressive portfolio of services and solutions. Ranging from training to effluent testing, raw material & product testing, chemical management audit, risk assessment and chemicals management training, it is perfect for any apparel organisation – whether they are embarking on their sustainability journey or within reach of their destination!

ECONOMIC ACTIVITY FOR THE BENEFIT OF ALL



A step-by-step approach to sustainability

STEP 1 – SOUND MANAGEMENT OF CHEMICALS TRAINING (SMC)

Knowledge is the critical ingredient in creating a sustainable supply chain. TÜV Rheinland offers comprehensive courses designed to provide education in a variety of important areas

STEP 2 – AUDITING

Auditing is important at every level of the supply chain in order to validate a controlled process.

STEP 3 – TESTING AND VALIDATION

Testing is the key to ensuring that progress towards a greener and more sustainable supply chain is maintained, regardless of economic conditions or business challenges. The ZDHC group has released a detailed Manufacturing Restricted Substances List (MRSList) to help the apparel and footwear industry to identify and phase out the substances.



TÜV Rheinland's hazardous substances testing services can help organisations to ensure that their production process – including waste-water and sludge – remains free of such substances (as per ZDHC waste-water guidelines). The testing results can be used to perform targeted follow-up audits and training.

CHEMICAL MANAGEMENT SYSTEM AUDIT

Suppliers in dyeing, finishing and tanning need to establish their own chemical management systems to control hazardous substance at source, strengthen processing control, testing and waste disposal.

This enables them to reduce the negative environmental impacts of hazardous chemicals and – importantly – provide certificates to prove that their own management systems are sound and well operated.

TÜV Rheinland can design an audit tool to help suppliers demonstrate the performance of their chemical management performance to buyers, and to track, compare and improve their own performance.

Higg Index VERIFIER

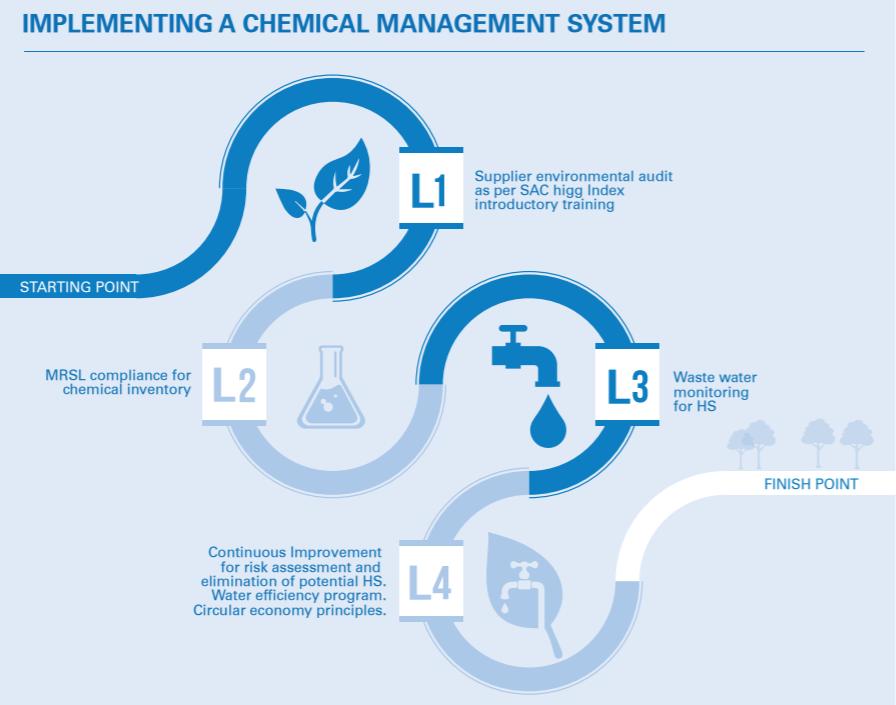
Higg Facility Environmental Module
EXPIRES 2019-04-28

Higg Index Ø ZDHC CHEMICAL SPECIALIST VERIFIER

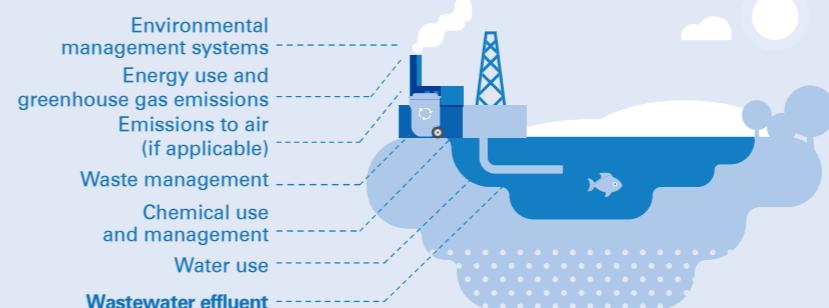
Higg Facility Environmental Module
EXPIRES 2019-05-08



DRAFT



ENVIRONMENT MODULE



IPE VERIFICATION

The Beijing-based Institute of Public and Environmental Affairs' (IPE) national pollution databases are increasingly being adopted by international brands to screen and monitor the environmental performance of suppliers.

As an accredited third party, TÜV Rheinland conducts onsite IPE audits. As well as highlighting positive performance, it confirms when facilities have rectified any previous environmental issues. Conducted in conjunction with another NGO to ensure integrity and transparency, the results are published directly on the IPE website.

SAC/HIGG INDEX ASSESSMENT

The Sustainable Apparel Coalition's (SAC) Higg Index is a standard supply chain measurement tool. It contains a set of self-assessment tools which can be used by factories or buyers of apparel, footwear and textiles.

TÜV Rheinland's assessment service can help organisations to comprehensively understand their sustainability performance from a Higg Index perspective.

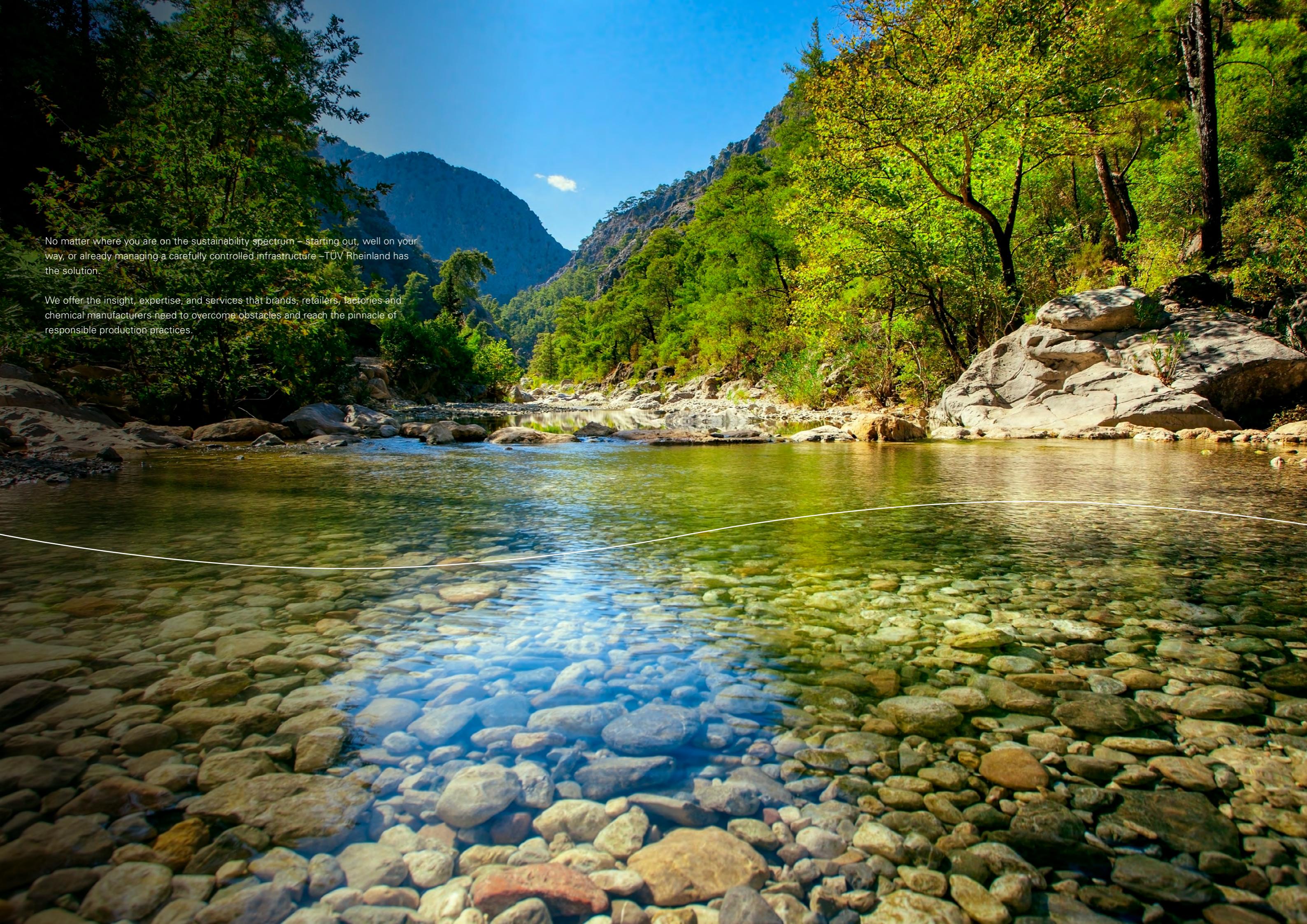
The Environment Module contains seven sections:

- Environmental management systems

- Energy use and greenhouse gas emissions
- Water use
- Wastewater/effluent
- Emissions to air (if applicable)
- Waste management
- Chemical use and management

- Chemical Management Training for Textile Industry (based on ZDHC curriculum, GIZ Chemical Management Toolkit)
- Globally Harmonized System of Classification and Labelling of Chemicals (GHS), and Safety Data Sheets (SDS)
- Chemical Inventory Management with our proprietary TOGS database
- Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation
- SAC Higg Index
- Occupational Health and Safety management
- Environmental Management and processes all over the world





No matter where you are on the sustainability spectrum – starting out, well on your way, or already managing a carefully controlled infrastructure –TÜV Rheinland has the solution.

We offer the insight, expertise, and services that brands, retailers, factories and chemical manufacturers need to overcome obstacles and reach the pinnacle of responsible production practices.

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