



UL's green services for
sustainable chemistry and
supply chain management



Empowering Trust[®]

Reducing discharge of hazardous chemicals

The textile and leather industries are under increasing pressure to minimize their impact upon the environment and improve the sustainability of supply chains. One aspect of textile and leather supply chain management under particular scrutiny is the use of hazardous chemicals in the manufacturing process that can be discharged into wastewater.



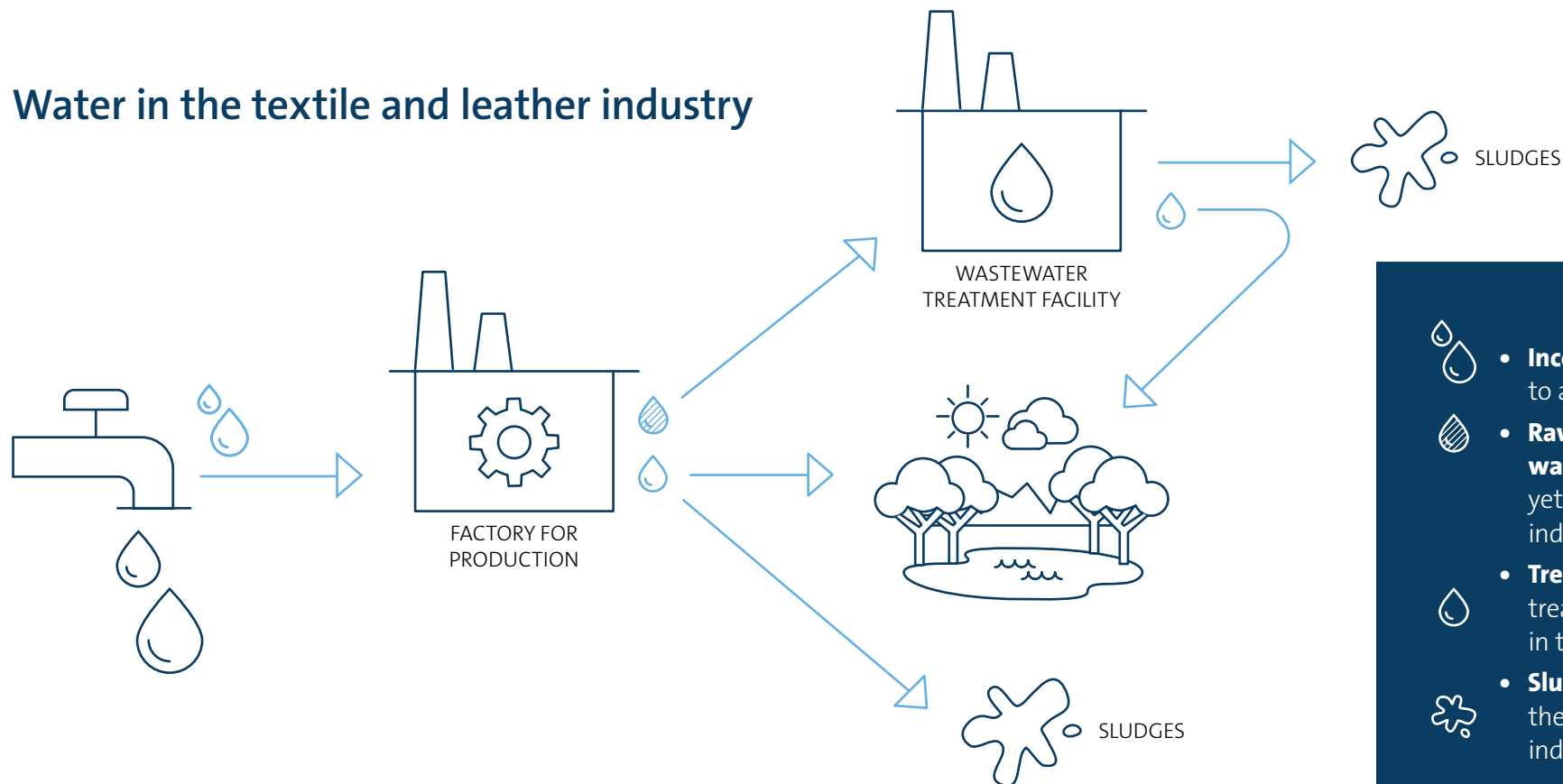


Numerous initiatives have emerged to address this issue, including:

- **Greenpeace's Detox campaign** launched in 2011 and aims to expose direct links between global clothing brands, their suppliers and toxic water pollution around the world. The campaign objective is to eliminate all releases of hazardous chemicals from textile and leather supply chains and products within one generation.
- The Joint Roadmap toward **Zero Discharge of Hazardous Chemicals (ZDHC)**, developed in response to the Detox campaign, demands that hazardous chemicals are eliminated from textile and leather supply chains by 2020, to be replaced by safer alternatives.

To meet the ambitious requirements of these initiatives, or even understand how your company meets them, it is vital to have in-depth supply chain knowledge in order to identify areas for improvement, develop corporate policies and seek alternative solutions.

Water in the textile and leather industry



- **Incoming water:** water supplied to a manufacturing process



- **Raw wastewater (untreated water):** wastewater that has not yet been treated prior to direct or indirect discharge from the facility

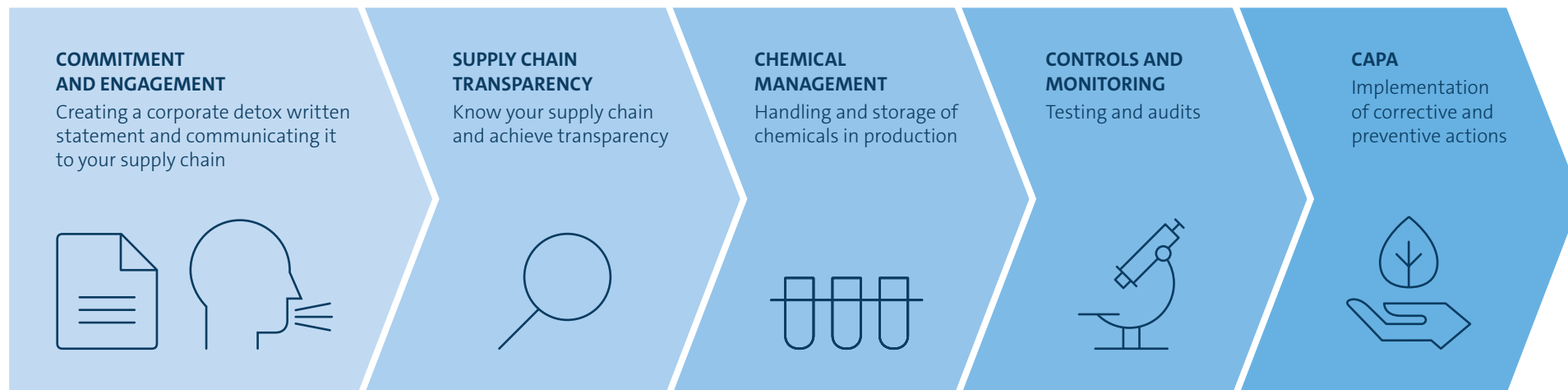


- **Treated wastewater:** water treated that can be reintroduced in the environment



- **Sludge:** a residual product from the treatment of urban and industrial wastewater

Key steps to detox



Testing parameters

Convention parameters

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

Metals

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

Anions

- Cyanide
- Sulfide
- Sulfite

Organic chemicals

- Alkylphenol (AP) and alkylphenol ethoxylates (APEOs)
- Chlorobenzenes, chlorotoluenes
- Chlorophenols
- Dyes azo (forming restricted amines), carcinogenic or equivalent concern, disperse (sensitizing)
- Flame retardants
- Glycols
- Halogenated solvents
- Organotin compounds
- Perfluorinated and polyfluorinated chemicals (PFCs)
- Ortho-phthalates
- Polycyclic aromatic hydrocarbons (PAHs)
- Volatile organic compounds (VOCs)



Chemical management system

A chemical management system is a systematic approach to procuring, storing, using and disposing of chemicals within a facility. One of the key elements of a chemical management system is the existence of chemical inventory in the factory.



A technical review of the chemical inventory can support you with:

- Compliance with legislation
- Conformity to your RSL and MRSL
- Definition of targeted testing program
- Substitution of polluting chemicals
- Reaction to new chemical legislations/evidence
- Improvements in your detox commitments
- Safety in the workplace

UL experts can support you with:

- Wastewater sampling
- Wastewater assessments based on ZDHC principles
- Testing on ZDHC conventional and unconventional parameters
- Conformance certification and testing to ZDHC MRSL Level 1
- Chemical management and environmental audits
- Training and education





Contact us for more information: [CRS.UL.com](https://www.crs.ul.com) or apparel@ul.com.

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