

Chemical Management Initiatives (Why ? When ? What ? How ?)



Agenda

Chapter	Subject	Page
1	How we got here ?	
2	Global Initiatives	
3	Industry Actions	
4	Introduction > ZDHC (Standards, Tools, Solutions)	

Fashion Industry : Impact



Image Source : Danish Fashion Institute

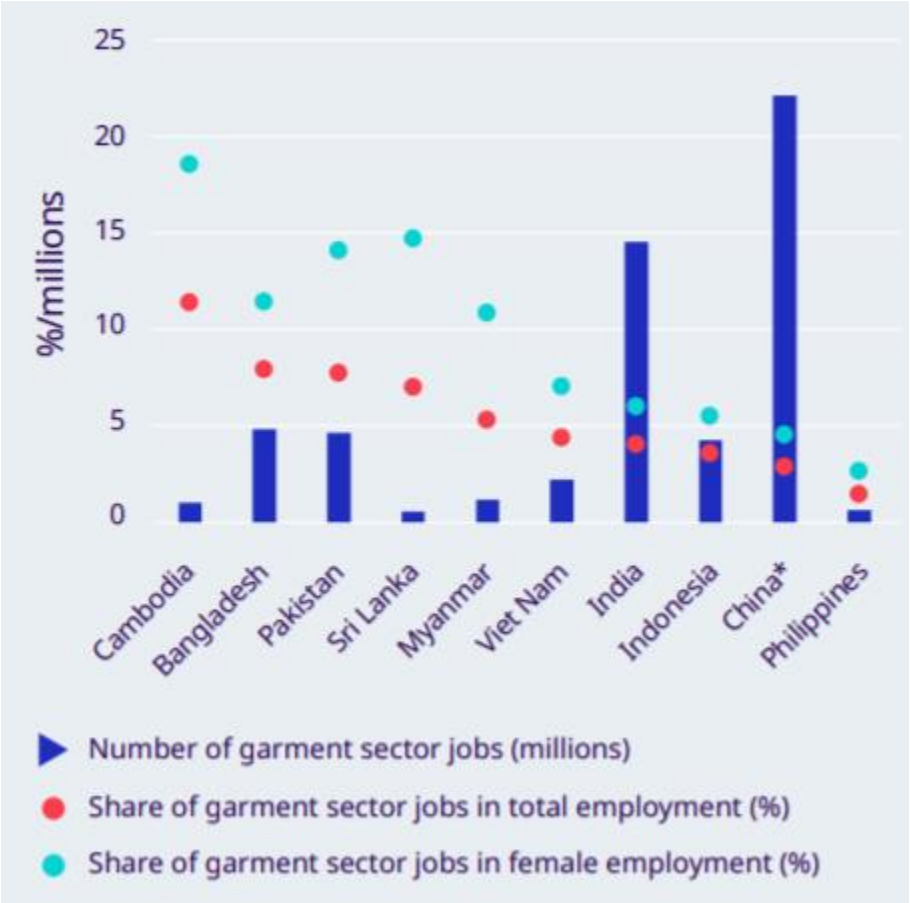
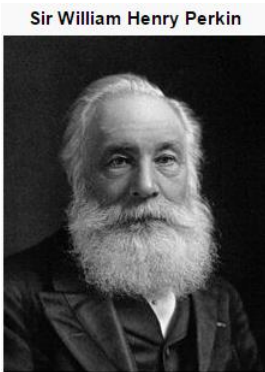


Image Source : ILO, 2019

Flashback : How we got here ?



Synthetic Dye
mauveine

1856



Prof Ian Rattee
Reactive Dye

1956

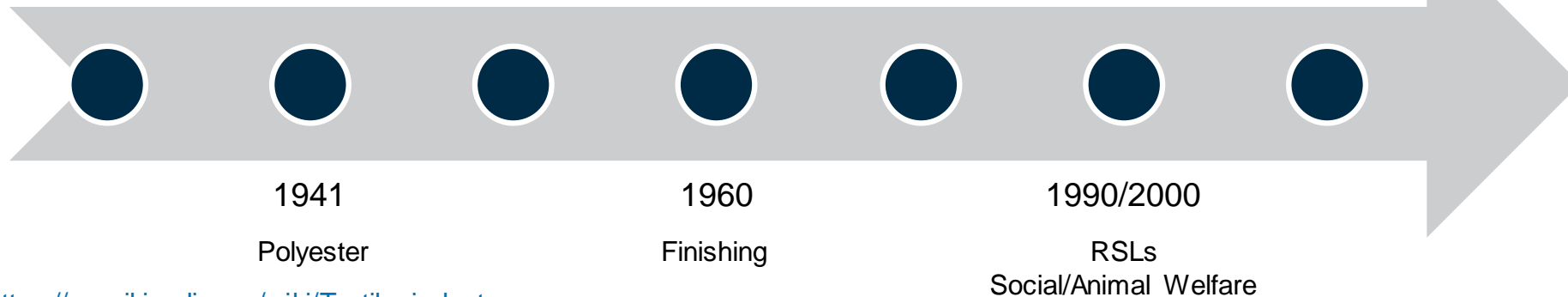


Move to Asia
Growth by 300%

1970/80



MRS, Upstream
Supply Network
Reporting/Compliance
2010
onwards



https://en.wikipedia.org/wiki/Textile_industry

http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_008075/lang--en/index.htm

SDC , Nimkartek



Background : Focus of NGO (Greenpeace) Campaigns

Residual Chemicals in
Products

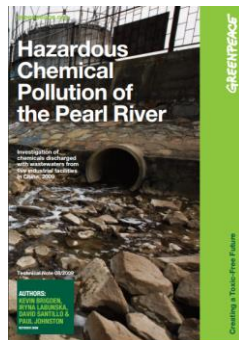


Aug 2011



Mar 2012

Residual Chemicals in
Discharge



Oct 2009



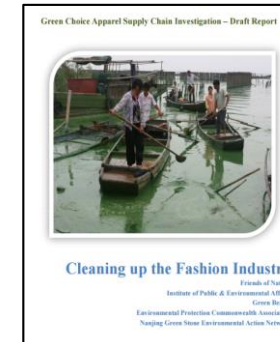
Jan 2010



Aug 2010



Jul 2011



Apr 2012



Oct 2012

Source : <http://www.ipe.org.cn/reports/Reports.aspx?cid=18334&year=0&key=&Page=2>
<http://www.greenpeace.org/international/en/publications/Campaign-reports/Toxics-reports/#tab=0&gvs=false&page=2>

Background : Focus of NGO (Greenpeace, IPE) Campaigns

Residual Chemicals in
Products

Dirty Discount Supermarkets: Dangerous Chemicals in Supermarket Clothing

Greenpeace tests clothes and shoes for children and young adults sold by supermarkets and leading retailers

1. Summary of the results

Greenpeace tested clothing and shoes for kids and young adults for harmful substances in the summer of 2014. The products were purchased in supermarkets in Germany, Austria and Switzerland. In total, 26 samples were examined in independent laboratories.

More than half of the samples contained harmful substances in concentrations above the reference values and precautionary levels used by Greenpeace for children's clothing.⁹

Jul 2014



Jan 2016



Jul 2016



Feb 2017

Residual Chemicals in
Discharge



Dec 2013

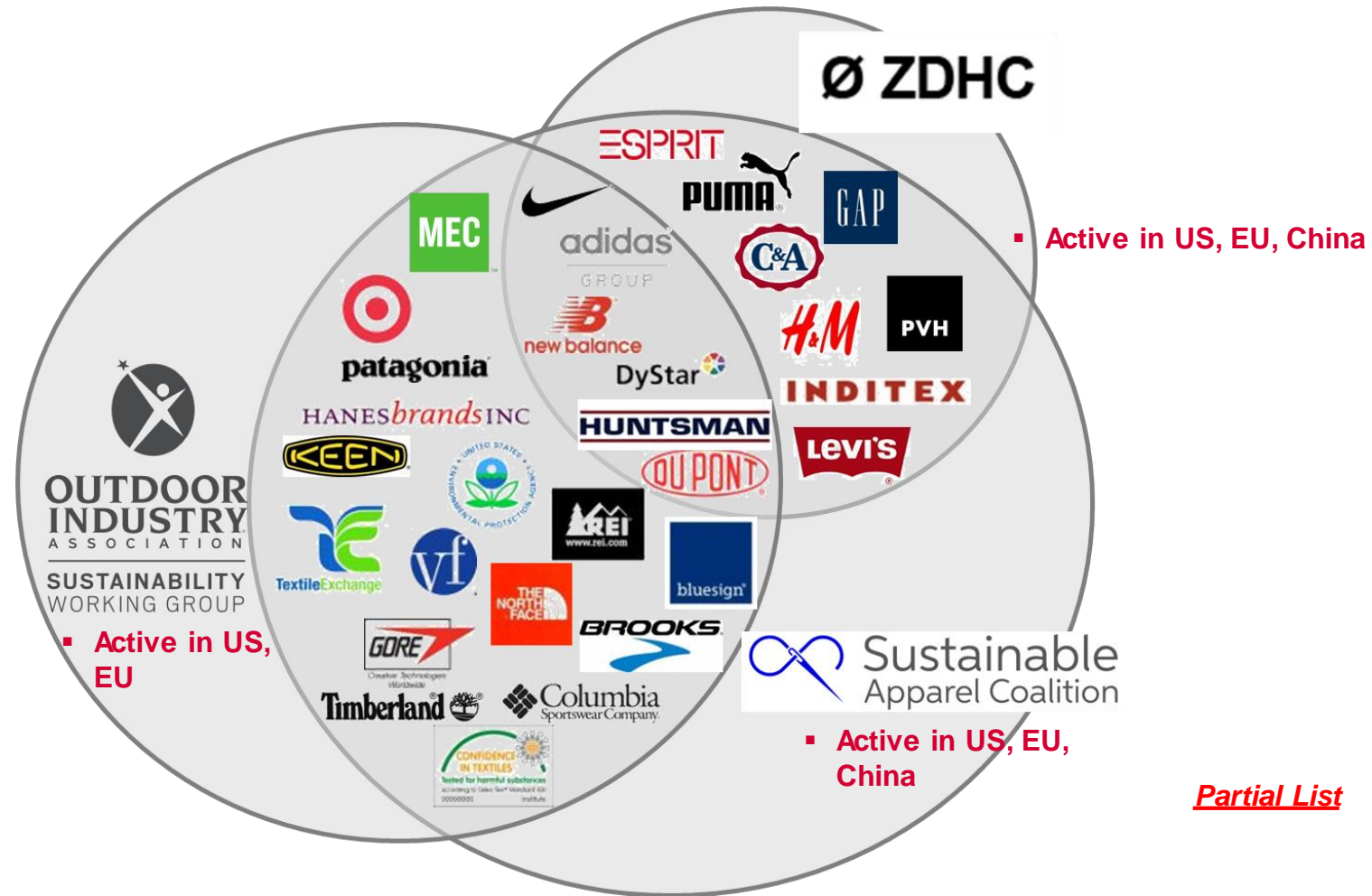


Source : <http://www.ipe.org.cn/reports/Reports.aspx?cid=18334&year=0&key=&Page=2>
<http://www.greenpeace.org/international/en/publications/Campaign-reports/Toxics-reports/#tab=0&gvs=false&page=2>

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Industry Initiatives (~ 40% of world's fashion industry)

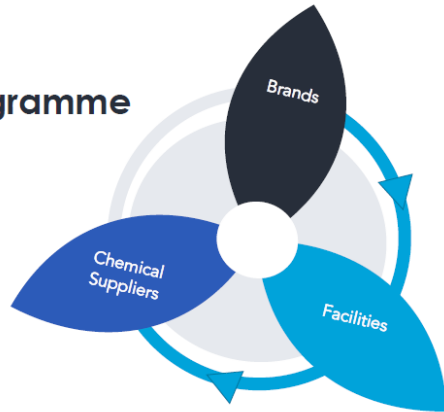


ZDHC Contributors : <http://www.roadmaptozero.com/contributors/>

Source : Outdoor Industry Association

Recent Catalysts : 2019

ZDHC
Leader Programme



*Driving
Implementation for Purpose*

- 100 %
Commitment
to use the ZDHC MRSL by the
Signatory Brand Leader
Programme.
- 100 %
Commitment
to use the ZDHC Wastewater
Guidelines by the Signatory
Brand Leader Programme.
- 76 %
Implementation
of ZDHC's Signatory Brands
implemented the Wastewater
Guidelines according to the
Leader Programme
Assessment

FASHION PACT



GRÜNER KNÖPF

SOZIAL. ÖKOLOGISCH.
STAATLICH. ZERTIFIZIERT.

Green Button! Germany's new textile standard

by Apparel Resources News-Desk

24-July-2019 | 1 min read



OPEN LETTER

The COVID-19 recovery: time to speed up sustainability of the fashion, apparel and textile sector



Policy Linkages for the Circular Economy Action Plan (CEAP)

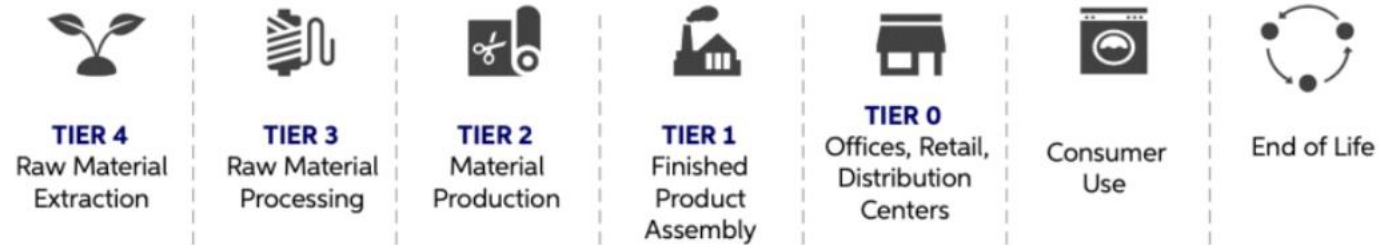


Pressure on Brands to engage upstream

CITI Evaluation Criteria		Respon- siveness	Compliance & Corrections			Extend Green Supply Chain		Data Disclosure & Transparency		Recycling	Total Score	Ranking +/-
		Respond to Enquiries	Establish Screening Mechanism	Push for Corrections	Centralized Wastewater Treatment	High- Impact Suppliers	Push for Upstream Manage- ment	Energy and Climate Data	PRTR	Recycling Used Products		
No.	Brand	12	12	14	10	14	8	10	12	8	100	+/-
1	Adidas	12	12	14	2.5	7	2	7.5	9	0	66	+6
2	H&M	12	12	7	2.5	7	4	5	6	4	59.5	-1
3	Levi's	12	12	10.5	2.5	7	2	5	6	2	59	+12
4	M&S	9	9	7	2.5	7	2	5	9	2	52.5	+2
5	Wal-Mart	9	12	14	0	7	4	2.5	3	0	51.5	+4
6	Esquel	9	12	14	0	7	2	2.5	3	0	49.5	-4
6	Nike	12	9	10.5	0	7	4	5	0	2	49.5	+3
8	Uniqlo	9	12	14	0	7	0	0	0	2	44	+4
9	Puma	12	9	7	0	7	0	2.5	6	0	43.5	-4
10	Target	9	12	7	0	7	2	2.5	3	0	42.5	+1
11	ZARA	9	12	7	0	7	2	0	3	0	40	+3
12	Burberry	9	9	7	0	3.5	2	2.5	6	0	39	New
13	Gap	9	9	7	0	7	4	0	0	0	36	-10
13	C&A	9	9	7	0	7	4	0	0	0	36	-10
13	IKEA	9	12	7	0	3.5	0	2.5	0	2	36	+4
16	Esprit	9	6	7	0	7	0	0	0	0	29	-4
16	Li-Ning	9	6	7	0	7	0	0	0	0	29	-1
18	Mizuno	9	6	7	0	3.5	0	2.5	0	0	28	+5

Textile Industry Rankings 2015

Transparency boost



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Market Demand > Brand/Retailer Commitments

fashion. We have now achieved 80% ZDHC compliance of input chemicals. Our H&M Group goal is to reach 100% ZDHC compliance in 2020 — we call it Roadmap to Zero.



Requirements for input chemicals

The input chemicals policy was implemented in 2016 and comprises two essential components: Firstly, production facilities are required to maintain a chemical inventory and valid safety data sheet (SDS) for all chemicals used, which need to fulfil the ZDHC MRSL requirements, used. Compliance is proven based on



Achieving 100% sustainable input chemistry by adopting the ZDHC MRSL



Communication of requirements for the use of hazardous substances (MRSL list) to suppliers:

41 companies already achieved this target | **19** companies continue working on the target



Since 2015, we have focused on implementing the program with suppliers and aligning the RSSP with the ZDHC MRSL. We also have focused on utilizing other tools and trainings developed within the ZDHC



Validation via Assessments & Audits

7. Does your facility select and purchase chemicals based on their hazards and **MRSL** / RSL requirements?

If yes, do all chemicals purchased and used in production meet the facility's chemical purchasing policy?

If no, do you have a process or plan for eliminating chemicals that do not meet the facility's chemical purchasing policy?



COMMON TOOLS AND STANDARDS

Common tools to be used industry-wide, delivered through active collaboration.

2016-2017: In collaboration with ZDHC members on the delivery of work such as the ZDHC Audit Protocol, Effluent Guidelines and ZDHC **MRSL** for the textile and footwear industry.



its usage. GOTS has been following the system of MRSL for chemical inputs since inception.



Opportunities to support SDGs





EFFICIENT RESOURCE USE

PROTECT MARINE AND TERRESTRIAL ECOSYSTEM

TECHNOLOGY UPGRADE

SUSTAINABLE INFRASTRUCTURE

HUMAN DEVELOPMENT

ECONOMIC DIVERSIFICATION

JOB OPPORTUNITIES

AWARENESS OF SUST DEV AND DATA AVAILABILITY

SUSTAINABLE PRACTICES

CIRCULAR ECONOMY

7.2 increase the share of renewable energy in the global energy mix

13.1 strengthen resilience and adaptive capacity to climate-related hazards

14.1 reduce marine pollution

7.5 expand infrastructure and upgrade technology for supplying modern and sustainable energy services

15.5 reduce the degradation of natural habitats, prevent extinction of threatened species

12.2 resource use efficiency

15.1 sustainable use of terrestrial and inland freshwater ecosystems and their services

9.4 upgrade infrastructure, resource-use efficiency + clean and environmentally sound technologies

11.6 cities: air quality and municipal and other waste management

11.b implementing integrated policies and plans towards inclusion, resource efficiency

6.4 water use efficiency

6.3 improve water quality by reducing pollution

12.4 environmentally sound management of all wastes

12.3 halve per capita global food waste at the retail and consumer levels

11.6 cities: air quality and municipal and other waste management

9.1 sustainable and resilient infrastructure

11.2 sustainable transportation

3.9 reduce deaths from air, water, soil pollution

12.5 reduce waste generation

6.5 IWRM

2.4 sustainable food production systems and resilient agricultural practices

8.4 global resource efficiency in consumption and production and endeavour to decouple economic growth

11.3 sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management

12.c fossil fuel subsidies

7.3 improvement in energy efficiency

11.c financially support LDC in building sustainable and resilient buildings utilising local materials

12.6 companies to adopt sustainable practices + sustainability reporting

10.3 reduce inequality

8.4 global resource efficiency in consumption and production and endeavour to decouple economic growth

11.3 sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management

12.c fossil fuel subsidies

7.3 improvement in energy efficiency

11.c financially support LDC in building sustainable and resilient buildings utilising local materials

12.6 companies to adopt sustainable practices + sustainability reporting

17.18 increase significantly the availability of high-quality, timely and reliable data

5.5 ensure women's full and effective participation and leadership at all levels

6.1, 6.2 access to safe drinking water and sanitation

4.1, 4.3, 4.4 access to education

3.8 access to health care

8.8 implement policies to promote sustainable tourism

11.4 protect world's cultural and natural heritage

8.2 economic productivity through diversification, technological upgrading and innovation

2.3 double the agricultural productivity and income

8.3 promote development-oriented policies

12.8 consumer information and education

1.2 reduce poverty in all its dimensions

12.1 circular economy

11.4 protect world's cultural and natural heritage

16.c transparency

9.2 inclusive and sustainable industrialization

8.5 decent work for all

4.7 education on sust. dev.

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From Detox to Roadmap to Zero



GREENPEACE
DETOX
CAMPAIGN

July 2011

- Sampled wastewater discharge at textile facilities in several countries in Global South
- Tested clothing purchased in brands' flagship stores
- Identified 11 Priority Chemicals that are discharged in wastewater & residual on end products
- Multiple brands committed to Detox commitment with "Zero Discharge by 2020" in mind

ZDHC INITIATIVE
FORMED

Q1 2012
Onwards

- "Zero Discharge of Hazardous Chemicals" was formed by 6 brands in response to address this challenge collaboratively
- Multiple brands began to join this initiative



ZDHC
FOUNDATION
FORMED

2015

- ZDHC was registered in Amsterdam in 2015 to deepen the programme & its engagement
- Developed a range of tools and guidelines to support a unified implementation approach
- Become a multi-stakeholder organization in which brands, retailers, suppliers, solution providers and chemical formulators are engaged



FROM FINITE TO
INFINITE GOAL

2020
Onwards

- Continue to converge the textile, footwear and leather approach on implementation to reduce duplication in the market
- Widen scope of development & deepen implementation in various geographical regions

The background features a person wearing safety glasses, with a magnifying glass held over a forest scene. The entire image is overlaid with a blue gradient and semi-transparent circular shapes.

OUR VISION is **widespread implementation of sustainable chemistry, driving innovations and best practices** in the textile, apparel, leather and footwear industries to protect consumers, workers and the environment.

From Multiple Requirements to One Aligned Global Framework

Environmental
protection focus

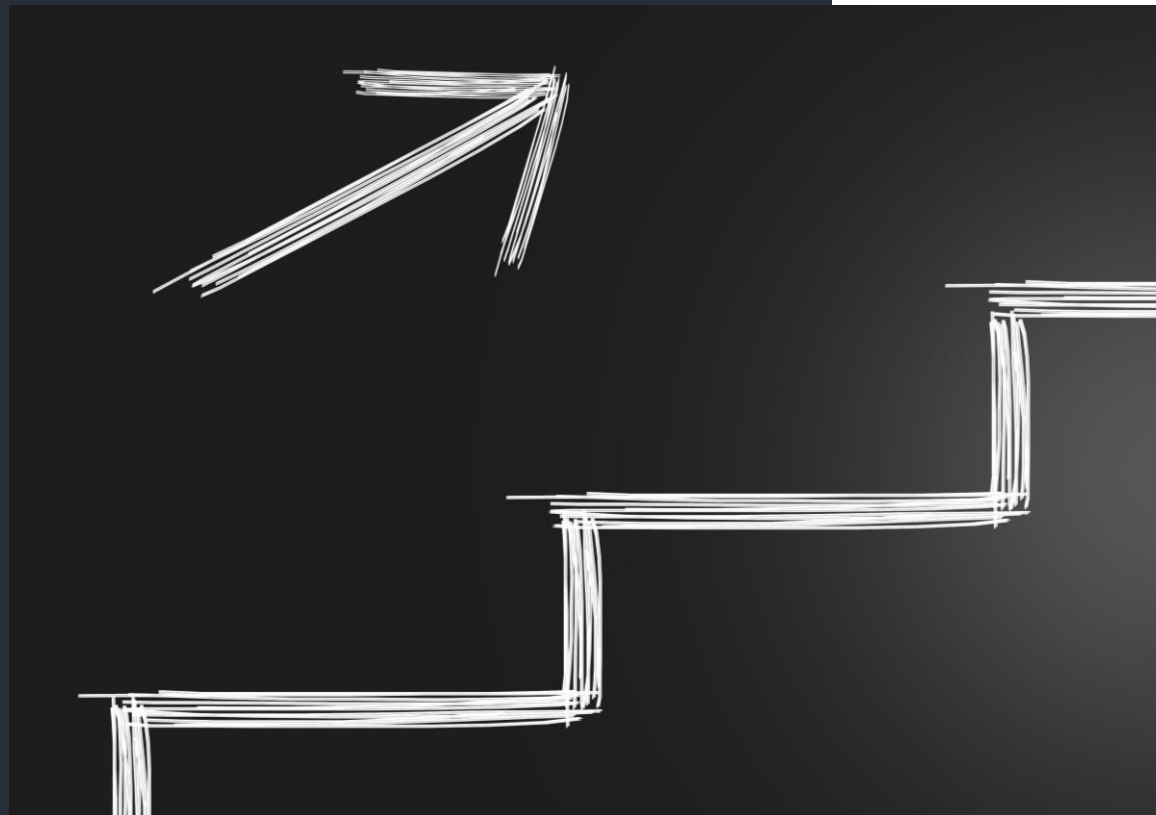
Setting the
standard for the
industry

Adoption and
industry
convergence

Accelerated
implementation
and positive
impact



From product
compliance



to proactive
supply chain
management &
innovation
leadership



Public Sectors

- Governments
- Inter-governmental Agencies
- International Development Agencies

Brands & Retailers

- International, regional and domestic brands of different sectors

Suppliers

- Wet processors
- Final Assemblers
- Tanneries
- Material suppliers

Chemical Formulators

Academia

Industry Associations

- Trade Associations
- NGOs
- Interest Group

Solution Providers

- Testing labs
- Certifiers
- Chemical & Environmental Management Consultants
- Wastewater Operators

Linking & Engaging Key Stakeholders In Textile, Footwear & Leather Value Chain

STRUCTURE OF ZDHC

02



An Integral Setup to Environmental Improvements



The Roadmap to Zero Programme

Developing guidelines and
solutions for the industry



The ZDHC Academy

Building capacity of the value
chains



The Implementation HUB

Scaling adoption and innovation

Holistic Systems Approach to Sustainable Chemical Management



Input



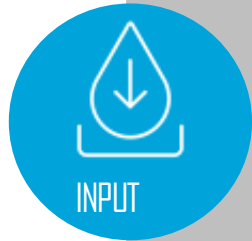
Process



Output

A Holistic Approach

GUIDELINES & SOLUTIONS



INPUT



ZDHC MRSL & Conformance Guidance



GATEWAY

By ZDHC

Chemical Module



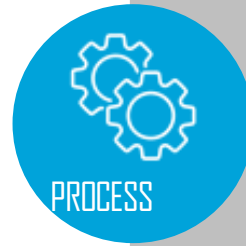
Chem**Check**

By ZDHC



In**Check**

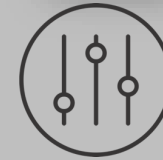
By ZDHC



PROCESS

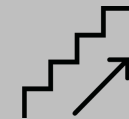


"How to ZDHC"
Chemical Management System Guidance

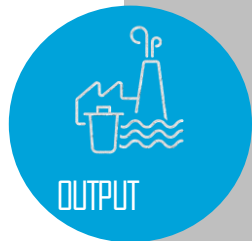


Harmonisation with assessment and audit schemes

- SAC - Higg FEM
- amfori BEPI
- Leather Working Group



ZDHC Leader Programme for Signatory Brands & Facilities



OUTPUT



ZDHC Wastewater Guidelines & Wastewater Treatment Technologies



GATEWAY

By ZDHC

Wastewater Module



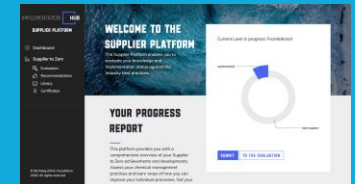
Clear**Stream**

By ZDHC

ACADEMY, IMPLEMENTATION HUB, StZ

IMPLEMENTATION

HUB



SUPPLIER

to Zero

By ZDHC



ACADEMY

By ZDHC

A Holistic Approach

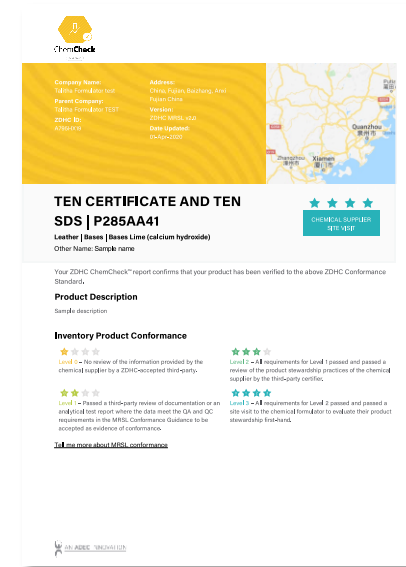
INPUT Management
Platforms, Guidelines & Solutions



ZDHC MRSL &
Conformance Guidance



Chemical Module



ChemCheck

By ZDHC

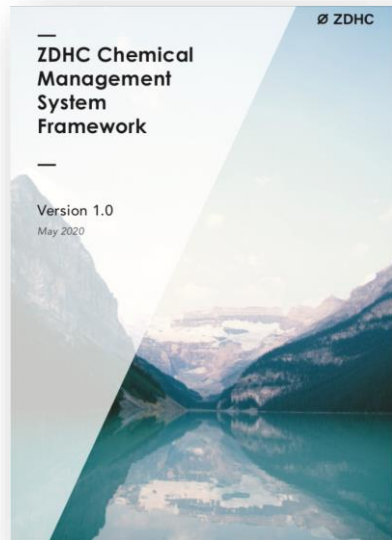


InCheck

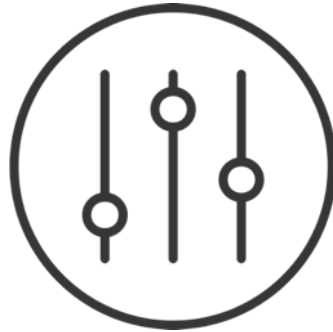
By ZDHC

A Holistic Approach

Process Management

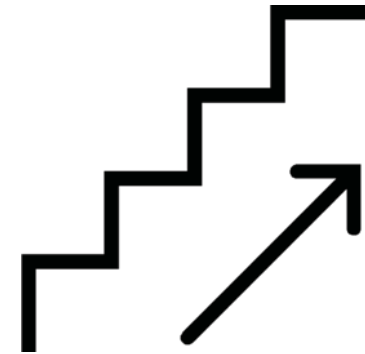


“How to ZDHC”
Chemical Management
System Guidance



SAC - Higg FEM
amfori BEPI
Leather Working Group

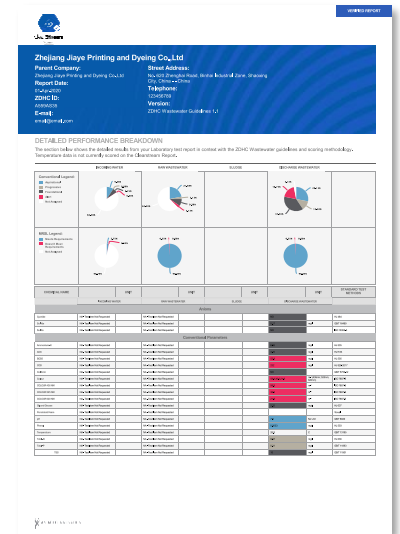
Harmonisation with assessment
and
audit schemes



Supplier and Brand to Zero
Programme


A Holistic Approach

OUTPUT Management

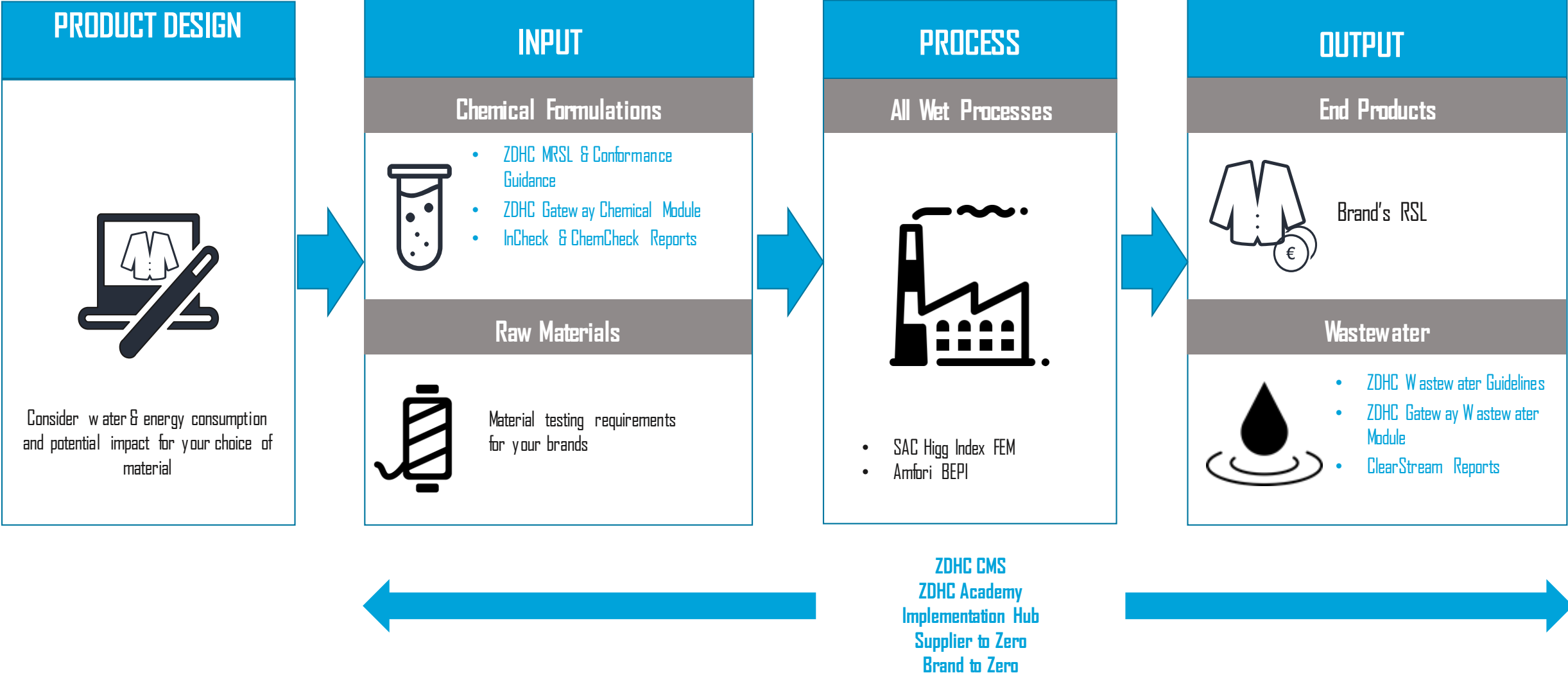


ZDHC Wastewater Guidelines & Wastewater Treatment Technologies

 **GATEWAY**
By Ø ZDHC
Wastewater Module

 **ClearStream**
By Ø ZDHC

How does (ZDHC) Platforms, Guidelines & Solutions Relate to Your Supply Chain?



Supplier to Zero

HOW TO ZDHC



Evaluation

► Journey

Start improving today!

Suppliers learn how they do in benchmarking to the industry expectations set by the ZDHC Chemical Management System Framework and Technical Industry Guide

Guidance

► 150+

Templates, Documents and Recommendations

Based on the ZDHC Chemical Management System Framework, Technical Industry Guide and Best Available Technology (BAT)

Peer Learning

► Use Cases

Be encouraged by Suppliers leading in implementation

The platform offers use cases prepared by experts and offers Suppliers to submit their own for review

SUPPLIER

to Zero

By Ø ZDHC



The entry point to sustainable chemical management for suppliers of all types

Self-evaluation based on the ZDHC CMS Framework

The Foundational Level provides more than 150 hands-on industry standard and best-practice guidance based on ZDHC CMS TIG.

Get a Foundational Level certificate after completion of the implementation

The screenshot displays the 'Supplier Platform' interface. On the left is a navigation menu with options: Dashboard, Supplier to Zero, Evaluation, Recommendations, Library, and Certificates. The main content area is split into two sections:

- WELCOME TO THE SUPPLIER PLATFORM:** A header section with a blue background and white text. Below it, a 'YOUR PROGRESS REPORT' section features a donut chart showing 'Current Level in progress: Foundational'. The chart has a small blue segment labeled 'Implemented' and a larger grey segment labeled 'Not implemented'.
- LIBRARY:** A section titled 'LIBRARY' with a sub-header 'Foundational'. It lists various resources such as 'Policy & Procedure: Standard Operating Procedure', 'Emergency spill specific input', 'Heavy Metal Emission Mitigation from Dyes & Pigments', 'Ecorefused @ Recycled Process', 'Fire Safety Procedures', 'Guidelines for Understanding', 'Handling Spills', 'Guidelines for Safety Data Sheet', 'Guidelines for Safe Storage', and 'Inspection Worksheet'. A large blue overlay is present over the 'Ecorefused @ Recycled Process' resource, titled 'ZDHC Manual Handling Spillages' with the subtitle 'Best practices and rules for handling of manual spillages'. Below this overlay, a table lists three steps for handling spills: 1) Plan and prepare for spillage response, 2) Evaluate and handle spills, and 3) Deal with a spillage made visible. Each step includes a brief description and a 'Download' button.

At the bottom of the screenshot, there is a small section titled 'Recommended Elements of an Spillage Control Plan' with a list of items and checkboxes.

Accessing the Supplier to Zero platform



1

Get access to ZDHC Gateway!

Fill in the ZDHC Gateway application form.
(<https://bit.ly/GetGatewayAccess>)

2

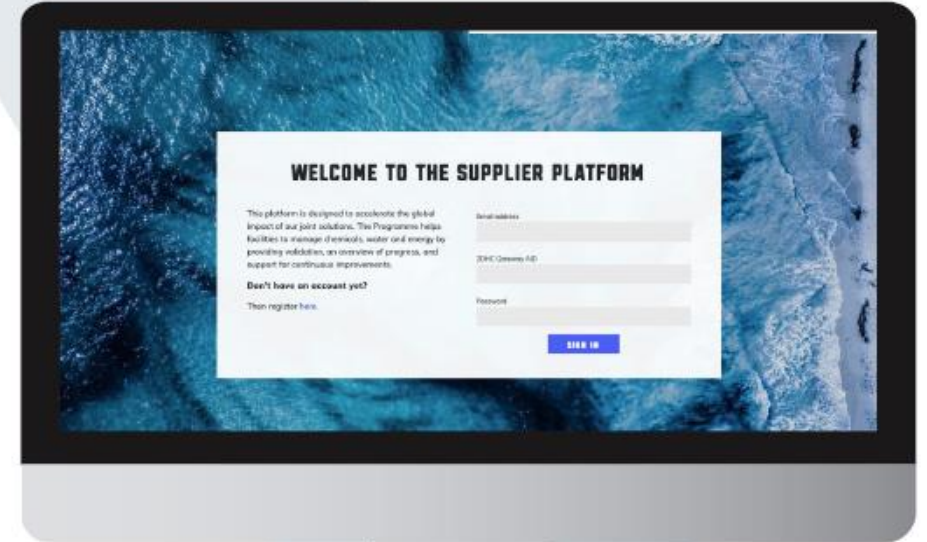
Register to ZDHC Gateway

3

Set the Gateway Supplier Profile first!

4

Go to
Supplier to Zero
(<http://supplier.roadmapzero.com/>)
Login with your ZDHC Gateway ID



Implementation Approach

ZDHC CMS FRAMEWORK & Technical Industry Guide



ZDHC CMS Framework
and
ZDHC CMS Technical
Industry Guide



SUPPLIER
to Zero By ZDHC



Provides same structure as CMS Framework
EXCEPT:

- **Assessments**
Diversified into 3 sub-chapters
- **Output Management**
Diversified into wastewater and sludge, air emissions and waste management
- **Training**
As stand-alone chapter
- **Resource Efficiency**
Addressing measures for general improvements

EVALUATION

— Supplier to Zero - Foundational

CMS POLICY

CMS STRATEGY

GENERAL ASSESSMENTS

SUPPLY CHAIN ASSESSMENT

ALTERNATIVE ASSESSMENT

HEALTH & SAFETY

CHEMICAL INVENTORY

STORAGE & HANDLING

WASTEWATER & SLUDGE

AIR EMISSIONS

WASTE MANAGEMENT

PROCESS CONTROL

CONTINUOUS IMPROVEMENT

TRAINING

RESOURCE EFFICIENCY



3 Levels to Leadership

FOUNDATIONAL

HOW TO ZDHC

- Self-evaluation
- Guidance and Learning
- Self Declaration

June 2020

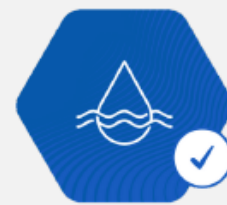
PROGRESSIVE

Implementation Performance



InCheck

By ZDHC



ClearStream

By ZDHC

Q2 2021

ASPIRATIONAL

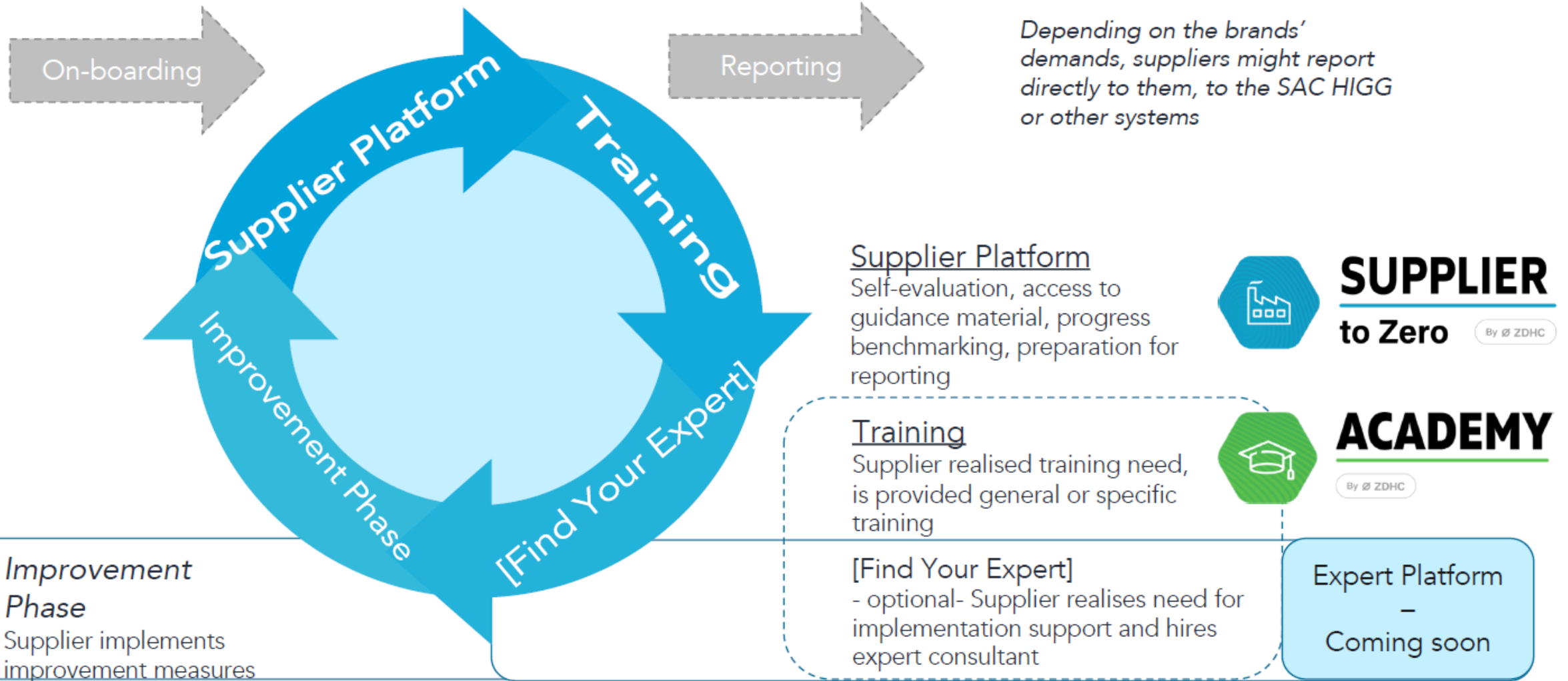
Leaders



- Leadership
- Implementation excellence
- Upstream implementation

Q3/Q4 2021

THE IMPROVEMENT CYCLE



►►► In-development ►►► Platform Features

**Further Supplier
Platform
Solutions /
Modules**



Use Cases

By Ø ZDHC

Use Cases (already online)

Suppliers can not only read best-practice and practical implementation use cases, they can also submit their own. The SZZ team performs a quality review before the Use Cases get published to other users on the platform.



RCA / CAP

By Ø ZDHC

RCA / CAP (coming soon)

This solution/ module will support suppliers in working on fails in WW with an optimized guidance and related recommendations. A standardized methodology ensures Brands' trust in resulting RCA/CAP documentation.



Resource Efficiency

By Ø ZDHC

Resource Efficiency (coming soon)

It will address the ZDHC commitment to the goals set by UNFCCC. Based on the former CPI2 platform, brand contribution and own development, the IHUB will provide a module that supports tier 2 suppliers in achieving climate goals.



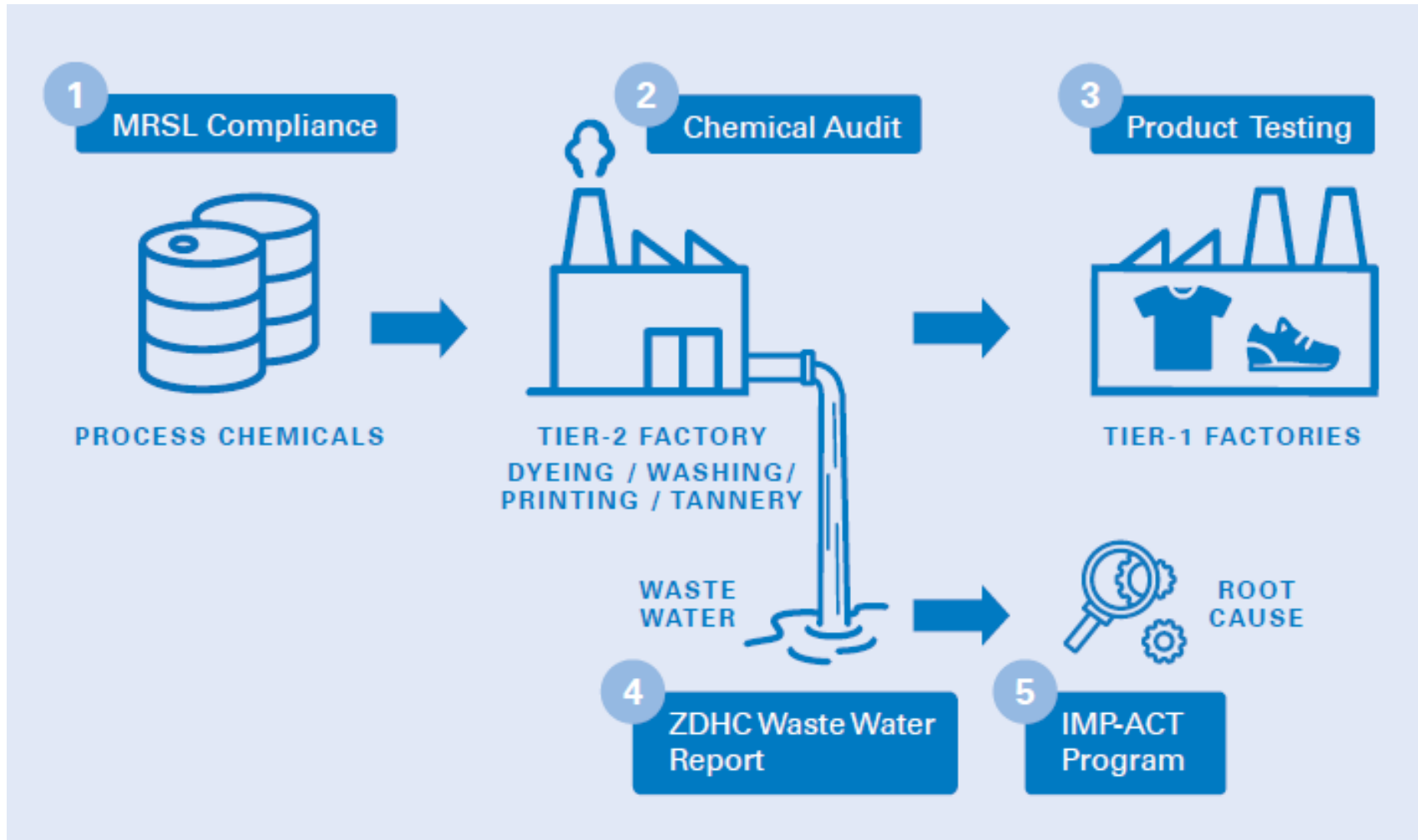
Man-made Cellulosic Fibre

By Ø ZDHC

MMCF (coming soon)

The MMCF solution/ module will enable suppliers to report on their ZDHC MMCF Guidelines implementation goals.

Engagement across supply chain



Higg Index CHEMICAL SPECIALIST
ZDHC VERIFIER

Higg Facility Environmental Module

ACCREDITED By ZDHC

Training Provider

ACCEPTED By ZDHC

Laboratory

ACCEPTED By ZDHC

Certification Standard

amfori BEPI
Trade with purpose

www.tuv.com/detox

Questions ? Feedback ?

CENTRAL AMERICA
(coming spring 2021)

- MEXICO
- HONDURAS
- GUATEMALA

DDiaz@mex.tuv.com

EUROPE

- GERMANY

Steffen.Tuemptner@de.tuv.com

ASIA-PACIFIC

- CHINA
- VIETNAM
- THAILAND
- CAMBODIA
- INDONESIA

Vietnam: Anh.Nguyen@tuv.com
China: Arrow.shi@tuv.com/carmen.yan@tuv.com
Indonesia: Ilyasa.Sumadi@tuv.com
Japan: Hidetoshi.Yamamoto@tuv.com

INDIA, MIDDLE EAST AND AFRICA

- TURKEY
- INDIA
- BANGLADESH

India: Shivendra.Parmar@ind.tuv.com
Turkey: Ata.Bayraktar@tr.tuv.com
Pakistan: Rashid.Mansoor@sa.tuv.com
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All Sustainability Topics
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- Expert Hub
- Chemical Formulation Testing (MRSL)
- Wastewater Testing
- Chemical Management Audits (amfori BEPI, SAC verification)
- Training (based on GIZ and ZDHC)