

2014 ANNUAL REPORT

Ø ZDHC

ZERO DISCHARGE
OF HAZARDOUS
CHEMICALS PROGRAMME



adidas
GROUP

BURBERRY



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Gap Inc.

G-STAR RAW

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BSI
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Deutschen Sportartikel-Industrie e.V.



GermanFashion
Modeverband Deutschland e.V.



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A Message from the ZDHC Group

With commitment, innovation and collaboration, the ZDHC Group and its key stakeholders accomplished major milestones on the path towards the 2020 zero discharge goal. This annual report describes actions taken in 2014 that are already affecting change across the textile industry.

Tangible progress was made on many fronts in 2014, including the release of the ZDHC Manufacturing Restricted Substances List (MRSL), supplier training in chemical management and the development and testing of a comprehensive environmental audit protocol. These tools will be instrumental in delivering environmental performance improvements to all parts of the supply chain—brands, chemical suppliers, manufacturers and other intermediaries. Our intent remains to work with dyehouses, chemical suppliers, other brands and key stakeholders to adopt ambitious chemical management standards.

Sincere and robust collaboration from many organisations in the textile industry continues to inspire and support the ZDHC Group in its mission. For this support, we are very grateful to our partner organisations who responded to the call for collective action. Your support and dedication is helping to transform the textile industry.

Warm regards,

adidas Group, Benetton Group, Burberry Group PLC, C&A, Esprit, Gap Inc., G-Star Raw C.V., H&M, Inditex, Jack Wolfskin, L Brands, Levi Strauss & Co., Li Ning, M&S, New Balance Athletic Shoe, Inc., NIKE, Inc., PUMA SE and PVH Corp.

In association with the Association of the German Sporting Goods Industry (BSI), European Outdoor Group (EOG) and German Fashion Modeverband Deutschland e.V.

LANDMARK YEAR OF ACCOMPLISHMENTS FOR ZDHC GROUP

Highlighted by the completion of major milestones, including the release of the Zero Discharge of Hazardous Chemicals (ZDHC) Manufacturing Restricted Substances List (MRSL), audit protocol and chemicals management training, 2014 marked a banner year for the ZDHC Group. Close collaboration among ZDHC brands and textile industry organisations continues to underpin the group's progress, which now has firmly transitioned from tool development to implementation.

Since the 1990s, apparel and footwear companies have worked to restrict the use of harmful substances in their products. In support of this, industry organisations have been collaborating for the past decade to harmonise product standards and communicate these standards throughout the supply chain. While these efforts have achieved great progress, brands recognised from the start that holistic system change will be required to achieve this goal.

In 2011, the ZDHC Group formed to catalyse positive change in the discharge of hazardous chemicals across the product life cycle by 2020. The Group's efforts are focused on involving the entire supply chain in solving these complex issues and on concentrating not just on end-of-pipe controls, but on improving inputs and processes.

2014 PROGRESS TOWARDS ZERO DISCHARGE

Prioritised Chemical Substances

- Published a framework for prioritising hazardous chemical substances for phase out or research.
- Published the ZDHC MRSL for priority chemical phase out.
- Published a Research List of substances for which safer alternatives will be sought.
- Provided MRSL training.
- Developed chemical guidance sheets to assist mills and suppliers with the phase out and substitution of substances restricted on the ZDHC MRSL.

Established the ZDHC Audit Protocol

- Completed 25 pilot audits across eight countries at wet processing facilities to test the Audit Protocol Version 1.0.
- Reported key findings of Audit 1.0 pilot audits in the 2014 Audit Protocol Report.
- Implementation of the Environmental Audit Protocol is underway and already being used by some ZDHC member brands.
- Drafted Environmental Audit Protocol Version 2.0 using collaborative input and pilot tested the updated tool.

Conducted Chemicals Management Training

- Prepared and conducted ZDHC Chemicals Management Training for suppliers in China, Bangladesh, Vietnam and India.
- Developed a Chemical Management System Guidance Manual to assist brands, retailers, Tier 1 and 2 suppliers and chemical suppliers to improve chemical management.

Engaged with Key Stakeholders

- Developed data schema to support MRSL compliance with the support of the American Data Exchange Corporation and input of more than 35 industry stakeholders.
- Continued collaboration and alignment with the Sustainable Apparel Coalition and Outdoor Industry Association.
- Initiated tool alignment discussions with the Leather Working Group, OEKO-TEX®, bluesign® and Solidaridad.
- Shared insights with strategic stakeholders at industry forums like the China National Textile and Apparel Council-ZDHC Conference (Shanghai) and Taiwan Textile Federation's Taipei Innovative Textile Application Show -ZDHC Forum.
- Expanded stakeholder outreach with key organisations in Bangladesh, China, India, Vietnam and Taiwan.
- Worked closely with the European Union Pollutant Release and Transfer Registers Commission and United Nations Environment Programme's Chemicals in Products project on right to know.

In the interest of transparency and sharing tools to advance environmental responsibility, ZDHC Group work products are available for public access at www.roadmapzero.com

JOINT ROADMAP

To achieve the zero discharge mission, in 2011 the ZDHC Group developed a Joint Roadmap which defined the critical path for achieving a new standard of environmental performance for the global apparel and footwear industry. Considered a living document, the Joint Roadmap contains the Group’s long-term vision with interim milestones for achieving the 2020 goal. Released in 2013, Version 2 streamlined programme efforts into seven main categories of work. During implementation, the need for integrated data management became apparent and a data management focus area was integrated into work efforts to assist the Group in measuring performance against goals (page 23).

- Workstream 1: Chemical Hazard Assessment, Prioritisation and Action
- Workstream 2: Training
- Workstream 3: Right to Know
- Workstream 4: Assessment and Audits
- Workstream 5: Management Systems Approach, Structure and Documentation
- Workstream 6: Stakeholder Partnering
- Workstream 7: Chemicals Management Best Practices Pilot



PROJECT SUMMARY: 2014 STATUS

Table 1 summarises the progress of each workstream against the Joint Roadmap commitments. The following sections expand on those workstream details.

Table 1. Project Progress across the Seven Workstreams

Action	Progress Tracker (%)			
	20	40	60	80
Workstream 1: Chemical Hazard Assessment, Prioritisation and Action				
■ Provide a list of chemical substances and prioritise for phase out or further research				
■ Increase awareness of chemicals targeted for elimination and substitution in the supply chain and provide recommendations				
■ Develop a key performance indicator (KPI) that each brand can use to track whether phase out has been achieved at a supplier location				
■ Define and develop the ZDHC Manufacturing Restricted Substance List (MRSL)				
■ Conduct a research project on durable water repellency technologies				
Workstream 2: Training				
■ Establish partnership with a training organisation and set up a near-term curriculum outline				
■ Disseminate and promote training in first key market (China)				
■ Develop training capacity in two additional markets				
■ Promote ZDHC training within other international programmes				
Workstream 3: Right to Know				
■ Define the criteria that will be included in the Right to Know performance rating mechanism	Not started. Determining methodology.			
■ Develop the process for creating the MRSL-compliant formulation list				
■ Publish the extensive research conducted by ZDHC in 2012 on disclosure methodologies for managing chemical compliance, including pollutant release and transfer registers				
Workstream 4: Assessment and Audits				
■ Develop a joint generic audit approach for environmental performance				
■ Develop a shared dyehouse audit protocol				
Workstream 5: Management Systems Approach				
■ Develop the ZDHC Chemical Management System Manual				
■ Develop guidelines for brands, Tier 3 suppliers and mills				
■ Develop ZDHC Chemical Management System (CMS) procedures	Not yet started.			
Workstream 6: Stakeholder Partnering				
■ Engage with key influencers in the system through three regional stakeholder meetings				
■ Align stakeholders with relevant workstreams				
■ Obtain commitments to zero discharge from 20% of suppliers, representing the highest materials volumes				
■ Increase the number of partner brands to 30 signatory members in 2014				
■ Establish an external advisory board	Revised approach.			
Workstream 7: Chemicals Management Best Practices Pilot				
■ Pilot best available chemistry practices at a set of supplier locations to determine which best practices have the most valuable outcomes and business case				

WORKSTREAM UPDATES

Joint Roadmap Workstream 1 Milestones

- ✓ Published ZDHC MRSL
- ✓ Published chemical guidance sheets
- ✓ Published ZDHC Research List

WORKSTREAM 1: CHEMICAL HAZARD ASSESSMENT, PRIORITISATION AND ACTION

This workstream involves prioritising hazardous chemicals for further action, inclusive of phasing them out or restricting their use in the supply chain, and encouraging innovation for alternative processes and substitutes where there are limited or no alternatives currently available. The tasks and goals in this workstream underpin the zero discharge mission. The work of this team is especially complex because:

- There are often limited publicly available toxicological data on chemical substances.
- Data regarding the global production volume of chemicals are very difficult to obtain. Determining the volume of a specific chemical used in the apparel and footwear supply chain is even more challenging.
- In many cases, a chemical has multiple functions and can be used both upstream (e.g., in the manufacture of chemical formulations) and downstream in the facilities where products are manufactured.

Challenges will be overcome by working closely with industry and academia to better characterise chemistry in current use and if needed by using widely utilised tools and techniques (such as quantitative structure-activity relationship [QSAR] and read-across predictive models) to generate additional toxicological data on safer alternatives. It also is essential that we work directly with our suppliers to review usage data and identify the best approach to eliminating the most hazardous chemicals from our supply chains.



2014 Workstream 1 Progress

Key milestones in 2014 include:

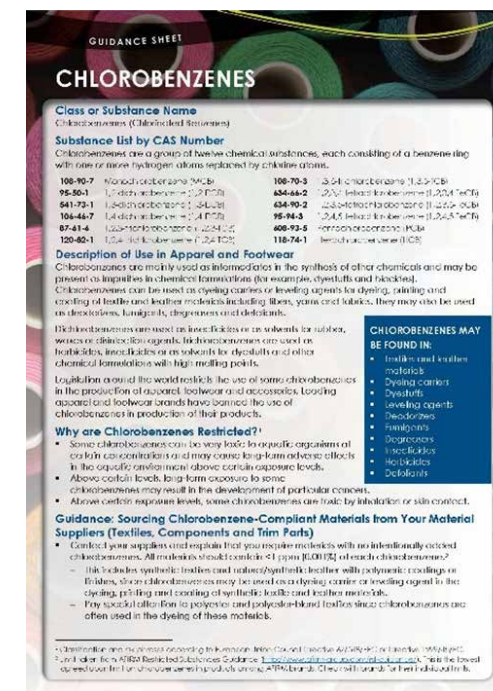
- **Finalised and published the ZDHC MRSL.** In 2014, the ZDHC Group released the MRSL, a list of chemical substances banned from intentional use in facilities that process textile materials and trim parts in apparel and footwear. The MRSL establishes acceptable concentration limits for substances in chemical formulations used within manufacturing facilities. Limits are designed to eliminate the possibility of intentional use of listed substances and apply to commercially available chemicals, chemical mixtures or chemical formulations. A commercial chemical formulation is usually a proprietary blend of several chemical substances that is available for purchase from chemical suppliers under their own trade name.

The MRSL was developed in collaboration with the ZDHC Technical Advisory Committee (representatives of the chemical industry) and peer reviewed by industry-leading experts at bluesign® and the Leather Working Group. The MRSL Version 1.1, which is already under development, includes feedback from the China Textile Auxiliary Standardization Subcommittee, China National Textile and Apparel Council and several Asia-based chemical suppliers and is expected for release in 2015.

■ Developed and published chemical guidance sheets.

Eleven chemical guidance sheets were developed and released in 2014 and now are available in English, Hindi, Kannada, Urdu and Simplified Chinese. The chemical guidance sheets are designed to support the release of the MRSL by assisting mills and suppliers with the phase out and substitution of restricted substances. Sheets address the products in which the substances are most often found, present guidance for sourcing compliant formulations and provide suggestions for safer alternatives if available.

Chemical guidance sheets currently include: toluene, nonylphenol, nonylphenol ethoxylates, long-chain perfluoroalkyl acids, phthalates, halogenated solvents, organotins, short-chain chlorinated paraffins, chlorophenols, chlorinated benzenes, polycyclic aromatic hydrocarbons/naphthalene.



■ Finalised and published the Research List.

The ZDHC Research List focuses the Group's efforts on research and development for prioritised substances that do not have safer alternatives for all uses in the market today.

When determined necessary, chemical briefs will be developed for chemicals on the Research List. The MRSL team will set limits for other chemicals on the list and, by encouraging key stakeholders to develop alternatives for chemicals on the list, the ZDHC Group hopes to move these chemicals more rapidly to the MRSL for supply chain phase out.

■ Contracted chemical research on alternatives to per- and polyfluorinated (PFC) durable water repellent (DWR) technologies.

The ZDHC Group, together with the Association of the German Sporting Goods Industry (BSI), European Outdoor Group (EOG) and Outdoor Industry Association, contracted De Montfort University to conduct research on safer alternatives to PFC DWR technologies. This study was completed and the Group initiated a review of findings in the fall of 2014.



- De Montfort research reports:
 - *An Evaluation of the Test Methods Used for Assessing Durable Water Repellent Fabrics Within the Outdoor Industry*
 - *Expectation of Durable Water Repellent Fabric Finishes*
- **Cooperated in SUPFES PFC project.** The aim of the SUPFES PFC project for textile manufacturing is to assist the industry in finding safer alternatives that can replace hazardous fluorinated chemicals. This coalition of scientists and industry are assessing the risks associated with using alternative chemicals, working to ensure that these alternatives provide the desired function.

Next Steps

- Finalise MRSL Version 1.1 to include chemicals related to the use of natural leather.
- Finalise template format for chemical companies in self-declaring their MRSL-compliant formulation lists.
- Develop, translate to multiple languages to maximise their value and distribute chemical guidance sheets to supply chain partners.
- Create and endorse the MRSL implementation plan and approach, including guidance for the supply chain when testing is recommended.
- Kick off research work to find safer alternatives for substances and their specific functional uses.
- Communicate ZDHC request for research and ask stakeholders to submit safer alternatives to substances on the Research List.
- Compare submitted alternatives against defined criteria to validate that they are safer.

WORKSTREAM 2: TRAINING

This workstream objective is to develop training infrastructure and content that will support awareness and sustainable knowledge transfer of the ZDHC concepts and the necessary skills and education to achieve and maintain those concepts for all parts of the supply chain, including brands and stakeholders.

2014 Workstream 2 Progress

Key milestones in 2014 include:

- **Conducted chemical management pilot training.** In conjunction with four training partners (EHS Academy, NimkarTek, Sustainable Textile Solutions and Sumerra), the ZDHC Group provided pilot chemical management training to 33 participants in China, 21 participants in India, 34 participants in Bangladesh and 23 participants in Vietnam.
- **Gathered training session feedback.** After completing training sessions, participants, observers, brand reviewers, training partners and the ZDHC Technical Advisory Committee provided training evaluation. This input was incorporated and the curriculum was refined for scale-up supply chain efforts in 2015.
- **Conducted MRSL training.** The ZDHC Group developed and provided MRSL training to chemical suppliers from China, Japan and Taiwan.
- **Supported supply chain knowledge transfer.** Initiating cross-collaboration efforts, the training team worked with other ZDHC workstreams and key stakeholders to provide training infrastructure and content that would support ZDHC supply chain knowledge transfer to internal and external audiences.
- **Developed key training partnerships.** Began discussions with the Sustainable Apparel Coalition, GIZ, China National Textile and Apparel Council, training providers in China, India, Bangladesh, Vietnam and other international organisations to disseminate, promote and scale up the use of ZDHC training materials.
- **Developing a network of authorised training partners.** In 2014, the training team began developing a network of training partners authorised to provide training to supply chain partners and scale-up the training using ZDHC materials.



Joint Roadmap Workstream 2 Milestones

- ✓ Conducted chemical management training
- ✓ Supported supply chain knowledge transfer
- ✓ Conducted MRSL training



- **Creating procedures for the selection, approval and evaluation of authorised training providers.** To provide training consistency, development of a procedure is underway for selecting and preparing training providers.

Next Steps

- Select and approve training partners, conduct training delivery and evaluate training sessions.
- Create training plan tracking, system and management.
- Develop progressive training module to provide suppliers with technical know-how to promote best chemical management practices, such as substitution and elimination efforts on 11 priority chemicals.
- Establish collaboration with other international organisations to promote the ZDHC concept and use of training materials.



WORKSTREAM 3: RIGHT TO KNOW

The Right to Know principle is one of the foundations of the ZDHC Group. As such, this workstream is focused on how disclosure drives improvements within the industry and also how it delivers value to key stakeholders.

2014 Workstream 3 Progress

Key milestones in 2014 include:

- **Published the Right to Know Disclosure Methodology Research Report.** Results presented in this report result from extensive research into chemical disclosure methodologies. This research was a critical step in identifying and selecting a disclosure platform that will improve chemicals management and publicly available indicators throughout the apparel and footwear supply chains.
- **Conducted research for the Right to Know report that was reviewed by the United Nations Environment Programme's, Chemicals in Products project and the Office of Economic Cooperation and Development of the European Commission.** As a result of this research, the ZDHC Group now recognises Pollutant Release and Transfer Registers as one of the best methods for addressing the specific issues posed by the ZDHC and advocated by the Right to Know principle. The group is mindful of the timescales involved in deploying this effort and the need to take interim action. This is being achieved by introducing a system to prevent intentional use of hazardous chemicals in the manufacturing process.
- **Engaged with non-governmental organizations to investigate potential pollutant release and transfer register partnerships.** The ZDHC Group continues to research this critical and complex topic. In 2014, the Group met with the Institute of Public and Environmental Affairs in China and the International Pollutant Release and Transfer Registers' Coordinating Committee to discuss chemical use reporting. The Group also presented at the Aarhus Convention in Maastricht on Pollutant Release and Transfer Registers.
- **Developed process for creating the ZDHC MRSL Compliant Formulation List.** A draft framework document is currently under review. This will provide the governance and template for chemical formulators to compile listings of MRSL compliant product and will align to the ZDHC data schema to enable compatible use with IT platforms.



Joint Roadmap Workstream 3 Milestones

- ✓ Published Right-to-Know Research
- ✓ Engaged with IPE, UNEP CiP and PRTR Coordinating Committee
- ✓ Developed process for creating the preferred list

"I would like to congratulate the ZDHC Working Group on their work on assessing PRTRs [Pollutant Release and Transfer Registers] as a tool for implementing the Right to Know principle. The assessment should provide information about all the PRTR experiences worldwide in order to get a complete overview about the use of PRTRs in terms of transparency and public access to environmental information. My congratulations for this initiative. I encourage ZDHC to continue in their commitment to community engagement and the Right to Know principle. PRTRs are powerful tools to provide assistance on this."

Iñigo de Vicente-Mingarro,
International PRTR Coordinating Group, Chair



- **Developing a solid foundation for the disclosure of data from suppliers.** Drawing on best practices developed in other workstreams, key data points are being incorporated into the development of a data schema. These will be used to indicate the progress of facilities in implementing ZDHC best practices for the responsible use and management of chemicals. These incentives will drive benefit to facilities in chemical management, while providing a data stream for future reporting.

Next Steps

- Complete development of a compliance framework to verify chemical formulations (levels of validation) from the industry and a mechanism to disclose non-conformances.
- In conjunction with Workstream 1, continue to work with the major testing institutes on common harmonised protocols for sample collection/test methods/reporting of chemical formulations (concentrate), water influent, effluent and residue sludge.
- Finalise disclosure methodology to ensure transparency, while observing conformance to antitrust legislation and respecting intellectual property.
- Develop the key metrics for disclosure and delivery platform.

"UNEP congratulates the ZDHC Working Group on their choice of PRTR and commends them in their commitment to community engagement and the Right to Know principle."

– Kevin Munn, United Nations
Environment Programme,
Chemicals in Products

WORKSTREAM 4: ASSESSMENT AND AUDITS

This workstream is creating assessment and audit approaches that promote strong environmental performance and continuous improvement throughout the supply chain. Audits have been designed to be conducted by accredited persons, either from third-party service providers or from a ZDHC brand. Additionally, the ZDHC Environmental Audit Protocol may be used by a facility in the form of a self-assessment.

2014 Workstream 4 Progress

Key milestones in 2014 include:

- **Developed common, harmonised assessment tools to be used throughout the industry and clear guidelines on best practices available for all supply chain stakeholders.** In alignment with the Joint Roadmap, an environmental audit protocol was developed through collaboration with the Sustainable Apparel Coalition, Outdoor Industry Association and Global Social Compliance Programme to ensure consistency in environmental auditing across the supply chain and sharing of audit findings (whilst ensuring compliance with antitrust regulations). These collaborative efforts also produced a number of tools and processes to support the Audit Protocol.
- Completed early in 2014, the ZDHC Audit Protocol aligns with the Global Social Compliance Programme's Reference Tool on Environmental Audit Process and draws on relevant guidance set out in International Standard ISO 19011: 2011 (guidelines for auditing management systems). It also draws from the ZDHC, Sustainable Apparel Coalition, Global Social Compliance Programme and other collaborators' member companies and their experience with environmental assessments and audits.
- **Revised Audit Protocol.** By gathering collective comments from key stakeholders, this workstream began revising the Audit Protocol, Version 1.0 in mid-2014. Ensuing protocol revisions for Version 2.0 include: simplified scoring, aligning site information to data management pilot project; addition of spider graphs, corrective actions, factory scores to each level and tab; addition of brand safety protection content; new metrics, glossary and micro, small enterprises tabs; and amending to have a standalone Chemical Audit/Self-Assessment tab.
- **Conducted Version 2.0 Pilot Audits.** Pilot audits were conducted with Version 2.0 to uncover any issues that might arise and hinder industrywide deployment.

Joint Roadmap Workstream 4 Milestones

- ✓ Published Audit Protocol 1.0 key findings
- ✓ Conducted pilot audits on protocol version 2.0
- ✓ Developed audit guidance and tools



- **Developed an implementation plan to rollout Audit Protocol, Version 2.0.** The assessment and audits team recognised the challenges of implementing a new environmental/chemical audit protocol to thousands of potential sites used by a variety of brands/third parties and therefore developed a strategic implementation and communication plan to support the rollout and implementation of the Audit Protocol, Version 2.0.
- **Developed a metrics tab for validation of Higg Index and other environmental measures.** The Sustainable Apparel Coalition’s Higg Index is a suite of assessment tools used to measure the environmental and social impacts of apparel and footwear products across the product lifecycle and throughout the value chain. Metrics in the ZDHC Environmental Audit Protocol spreadsheet (Tab 9) directly reference the Higg Index for validation.

- **Setup tools training and capacity building programmes to support the entire supply chain.** Memorandums of Understanding (MOU) are in place with the Sustainable Apparel Coalition, Global Social Compliance Programme, Outdoor Industry Association, Solidaridad, Leather Working Group and OEKO-TEX® and discussions have commenced to create a MOU with bluesign®. The ZDHC Group also will continue to reach out to other key stakeholders for further harmonisation and adoption of the ZDHC Audit Protocol.

Next Steps

- Develop data schema with Data Management Team for Version 2.0.
- Begin development of Version 3.0 for inclusion of leather (harmonisation with the Leather Working Group, OEKO TEX®, bluesign®).
- Collect, analyse and edit Version 2.0 audits for improvement in Version 3.0.
- Continue to work with stakeholders to refine Version 3.0.
- Work with stakeholders for content maintenance MOU.

WORKSTREAM 5: MANAGEMENT SYSTEMS, APPROACH, STRUCTURE AND DOCUMENTATION




This work focuses on creating the approach, structure and documentation needed to support a ZDHC chemical management system (CMS) that assists brands, retailers, Tier 1 and 2 suppliers and chemical suppliers in understanding their roles, by developing clear guidelines that allow all committed supply chain stakeholders to participate and take responsibility for their part of the value chain. This level of alignment and harmonisation will be key to delivering on the ZDHC vision, mission and 2020 goals.

2014 Workstream 5 Progress

By developing a CMS structure for the apparel and footwear supply chain that includes all our existing and future work activities, we have provided the ZDHC Group with a sound structure that is recognised, understood and easy to communicate to the textile industry.

Key milestones in 2014 include:

- **Developed a CMS approach that met the ZDHC Audit Protocol requirements.** Applicable audit protocol questions are called out for each CMS element. These elements contain references to ZDHC audit questions so a user can better understand the relationship between the audit question and the expected minimum practice expected by the ZDHC Group.
- **Created an overall CMS framework that includes three skill levels (Foundational, Progressive, Aspirational).** The CMS was designed to be easily internalised by the brands and their supply chain partners while accommodating the complexity of the ZDHC roadmap work and the textile supply chain chemistry applications. The framework builds on ISO management standards and other applicable frameworks, such as the Outdoor Industry Association’s Chemical Management Working Group Framework.

Symbol	Organisational Skill	Skill Definition
	Foundational	Foundational (beginning) chemical management
	Progressive	Progressive (started but with room to grow) chemical management
	Aspirational	Aspirational (advanced) chemical management

Joint Roadmap Workstream 5 Milestones

- ✓ Developed a management framework
- ✓ Aligned CMS approach with Audit Protocol
- ✓ Developed draft Chemical Management System Guidance Manual

- **Aligned and coupled the overall management framework and the Audit Protocol.** The pilot audit summary report developed by the assessment and audits team provides information about the expertise levels encountered to better target educational direction for development of the Chemical Management System Guidance Manual.



- **Developed a draft interactive/instructive Chemical Management System Guidance Manual with content to support implementation of an overall management framework.** Documentation in this manual includes outcomes of workstream activities and thereby creates a comprehensive, yet pragmatic management system.

Next Steps

- Finalise the Chemical Management System Guidance Manual.
- Rollout the Chemical Management System Guidance Manual.
- Provide CMS training and guidance.

WORKSTREAM 6: STAKEHOLDER PARTNERING

Stakeholder engagement and outreach activities continued to cross-cut all ZDHC workstream and programme activities in 2014. Close, productive collaboration and consultation with textile industry and related associations and non-governmental organisations, as well as the chemical industry, contributed to galvanising support for the zero discharge mission. Likewise direct engagement through participation in events and trainings served as a catalyst for engaging global supply chains.

The ZDHC stakeholder partnering team worked in concert with other workstreams to promote the message of zero discharge and call attention to the issuance and implementation of key group milestones.

2014 Workstream 6 Progress

Key milestones in 2014 include:

- **Engaged with key system influencers to avoid duplication of effort and resources in addressing similar broad goals.** The ZDHC Group sponsored five regional stakeholder meetings in 2014 to develop strategic relationships and to find areas of collaboration and alignment with participating organisations. Regional meetings were conducted in the United Kingdom, Bangladesh, China and Taiwan.
 - **ZDHC-China Non-governmental organisation Workshop.** In April 2014, ZDHC member brands invited three China-based NGOs to participate in a one-day workshop on pollutant release and transfer registers and public disclosure practices in China. The workshop was split into four sessions on regulations and trends – an overview and big-picture trends on disclosure; pollutant release and transfer registers and disclosure processes; Institute of Public and Environmental Affairs disclosure (real-time data and government expectations); Greenpeace and the Institute of Public and Environmental Affairs disclosure experience to date with the detox platform.

Joint Roadmap Workstream 6 Milestones

- ✓ Engaged with ZDHC-China National Textile and Apparel Council conference participants in Shanghai
- ✓ Participated in Taiwan Innovative Textile Application Show
- ✓ Presented at more than 25 industry events



- **Bangladesh Stakeholder Forum.** In September 2014, ZDHC with the



Bangladesh Garment Manufacturers and Exporters Association, a key partner in the Partnership for Cleaner Textiles project, hosted a stakeholder meeting in Bangladesh to provide updates on ZDHC, identify areas of potential collaboration and understand supplier perspectives on how the ZDHC Group has benefitted their organisations. This was the first ZDHC-sponsored stakeholder event held in Bangladesh and signifies the beginning of significant collaboration with industry organisations there.

ZDHC-CNTAC attendees participated in discussions on chemical management, training and the ZDHC pilot projects with 10 factories.



- **ZDHC-China National Textile and Apparel Council Event in Shanghai.** Continuing the tradition of collaboration and engagement, in 2014 The ZDHC Group with the China National Textile and Apparel Council presented a second textile conference in Shanghai. More than 300 participants from the industry participated in discussions about the MRSL, disclosure and public release and transfer registries and training and auditing.
- **Taiwan Innovative Textile Application Show.** In October 2014, ZDHC participated in the Taiwan Textile Federation forum, launching large scale group engagement in Taiwan. Attendees were provided information in Traditional Chinese and English including an overview of ZDHC, discussion and review of the MRSL and path towards zero discharge. Attendees responded favourably to the event and expressed an interest in continuing to engage with the Group.

- **Engaged stakeholders for which the ZDHC Group needs additional expertise and resources.** The ZDHC Group has continued to closely collaborate with key stakeholders on the road to zero discharge. In 2014, teams

worked with, among others, the Sustainable Apparel Coalition, Outdoor Industry Association, Solidaridad, the International Pollutant Release and Transfer Registers' Coordinating Group and the Global Social Compliance Programme.

In 2014, the ZDHC Group presented at more than 25 industry meetings and events, including: Greenbiz Forum, American Apparel and Footwear Association's Environmental Committee Meeting, China Dyestuff Industry Association, China Institute of Public and Environmental Affairs, China Interdye, China National Textile and Apparel Council's Corporate Social Responsibility Day, Sustainable Apparel Coalition meeting in Vietnam, Verband TEGEWA e.V., BLC Leather Technology Conference, Sumerra Global Compliance Summit, Sustainable Apparel Coalition meeting in Ho Chi Minh City in coordination with the Outdoor Industry Association, Federation of the European Sporting Goods Industry Environmental Committee, China Dyestuff Industry Association, Outdoor Industry Association's Chemicals Management Working Group, China National Textile and Apparel Council's Annual Meeting, Taiwan International Chemical Industry Forum with Taiwan Chemical Industry Association, Society of Dyers and Colourists North, Bangladesh ZDHC-International Finance Corporation workshop, Taiwan Textile Federation's Taipei Innovative Textile Application Show Industry Roundtable, chemie3 meeting, Sustainability Management meeting for sustainability, Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers North America, BizNGO Conference and the MEP Foreign Economic Cooperation Office-Stockholm International Water Institute textile workshop.

- **Engaged with chemical suppliers to promulgate best practices.** Outreach and engagement with mills and chemical suppliers has occurred at a workstream level through pilot projects and MRSL rollout. The stakeholder partnering team supported this engagement throughout Asia at events and meetings by discussing the ZDHC Group's work and collaboration touch points.
- **Increase the number of partner brands.** Signatory members increased to 18 in 2014 and associate members increased from 2 to 3 members, bringing the total membership to 21 organisations.

Next Steps:

- Explore developing regional stakeholder boards to strengthen engagement.
- Support workstream efforts to move from tool development to widescale adoption of ZDHC work products as industry standard.

Next Steps

- Conduct kickoff meeting, including taking baseline data and samples.
- Visit mills and analyse processes.
- Review results and recommend best practices to the mills.
- Quantify benefits and present as the business case for making process changes.
- Provide training on how to implement these best practices.

WORKSTREAM 7: CHEMICALS MANAGEMENT BEST PRACTICES PILOT

The objective of this workstream is to perform onsite case studies that will allow evaluation of a facility's improvement in environmental performance and business impacts (benefits and costs) through their implementation of best available technologies and chemicals management (chemical products) and by optimising mill production processes.

The development team for this template included brand representatives, the ZDHC Technical Advisory Committee and brand team representatives in Asia. Collaborating partners will be added as the project progresses.

2014 Workstream 7 Progress

Key milestones in 2014 include:

- **Developed the Best Available Practice monitoring plan which will serve as the basis for conducting the workstream pilot project.**

This monitoring plan includes:

- Prescreening criteria
- Current process measurement
- Chemical scoring
- Water quality measurement
- Air quality measurement
- Energy and water use measurement
- Productivity and quality measurement

- **Chartered two mills to participate in a pilot project.** With assistance from the ZDHC Group's Asia-based team members, the Chemicals Management Best Practices Pilot team partnered with and chartered two mills for participation in this project.

- **Scheduled initial Chemicals Management Best Practices Pilot meeting.** To introduce the pilot project and prepare all parties for the project kickoff, a May face-to-face meeting between all parties has been planned in China.

Joint Roadmap Workstream 7 Milestones

- ✓ Developed Best Available Practices monitoring plan
- ✓ Recruited mills for pilot project
- ✓ Scheduled mill face-to-face and kickoff meetings

DATA MANAGEMENT WORKSTREAM

As the Joint Roadmap was being implemented, the need for integrated data management became apparent and further research revealed that other industries and topically focused interest groups with extended supply chains have faced similar challenges in effective data sharing.

ZDHC Group members and supply chain participants including mills, chemical companies and third-party service providers explored the challenges in data capture and reporting, recognising that a tremendous amount of duplicate work was being performed and that a thoughtful approach to sharing data could reduce the burden for all involved. Two systemic challenges were identified:

1. The need for a common language (schema) to enable industry participants to share information whilst safeguarding the confidentiality of the many contributors.
2. Lack of a mechanism and market-driven solutions that facilitate sharing of the information in a confidential, effective and efficient way.

In 2014, the ZDHC Group began the process of developing a universal set of standards to organise the way in which key chemical data should be collected and shared for the benefit of all stakeholders. Even as individual brands begin to work towards the use of the data standards in their supply chains, the ZDHC Group will work with other organisations (such as the Sustainable Apparel Coalition and Outdoor Industry Association) to develop effective means for sharing standardised data on chemistry management.

2014 Progress

Key milestones in 2014 include:

- **Determined the need for measuring MRSL compliance.** The ZDHC Group formally established a Data Management workstream to address data management issues as part of the larger endeavor toward zero discharge and to minimise duplication of effort in the extended supply chain.
- **Aligned on the importance of standards for data collection.** To provide structure to the process and method of data collection, the ZDHC Group considered the following data collection challenges:
 - Risk tolerance of the brands determines the level of detail (data)
 - Lack of common definitions for focused areas of supply chain and processes
 - Lack of standards and methods for measuring MRSL
 - Lack of collaboration amongst system players (e.g. chemical companies, third-party verification systems)

- **Aligned on approach for developing data management standards.** As a result of in-person meetings, a phased approach to data management was developed:

- Phase 1 - MRSL compliance utilising chemical inputs
- Phase 2 - Audit data schema
- Phase 3 - Discharge data schema
- Phase 4 - Chemical management process data schema

- **Developed Phase I data schema.** With support of ADEC and input of more than 35 key industry stakeholders, gathered the most important chemistry-related business questions and ordering of priority. Input for standards development top-priority issues included:

- Anchoring data collection at the wet-processing mill level
- Focusing on standardising the data within the key processes at the mill level

- **Agreed to pilot Phase 1 data schema in 2015.** Reviewed data schema in September 2014 and agreed that piloting the data schema prior to its publication would be beneficial. Six brands agreed to test the data schema and will complete their pilots in 2015.

Next Steps

- Pilot Phase 1 data schema focusing on the data points that reflect transactional exchange between chemical companies and mills, including critical insights about how the mills ensure MRSL compliance using chemical formulation inventory and purchase data.
- Capture Phase 1 pilot learnings and share with ZDHC brands and other key stakeholders.
- Adjust Phase 1 data schema considering pilot learnings and formally publish.



TO OUR PARTNERS

Working in concert with multiple elements of the vast textile industry network continues to underpin the ZDHC Group's work. Alongside partners, solid strides were made in 2014 towards the Group's goals. These tangible improvements already are resulting in improvements in the textile supply chain environmental performance. We are eager to continue this momentum, taking on known and unknown challenges and pushing towards zero discharge. Our collaboration with you has and will continue to make our ambitious 2020 goal attainable.

A special thanks to ZDHC partners.

American Data Exchange Corporation (ADEC) • Archroma Management GmbH • BASF SE • Bayer Material Science AG • bluesign® • BLC Leather Technology Centre's Leather Working Group (LWG) • Bureau Veritas (BV) • Business for Social Responsibility (BSR) • CEFIC • CHT • China Dyestuff Industry Association (CDIA) • China Institute of Public and Environmental Affairs (IPE) • China Ministry of Environmental Protection (MEP) • China National Textile and Apparel Council (CNTAC) • Clean Production Action • Colour Connections • Daikin Chemical • Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) • Dow Corning Coordination Center S.A. • DuPont • DyStar • Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers (ETAD) • European Chemicals Agency (ECHA) • European Environmental Bureau (EEB) • Forum for the Future • German Federal Environment Agency (UBA) • Global Social Compliance Programme (GSCP) • Green Chemistry and Commerce Council (GCCC) • Hohenstein Institute • Huntsman • Institute for Sustainable Communities' EHS Academy • International Finance Corporation (IFC) • International Chemical Secretariat (ChemSec) • International PRTR Coordinating Group • LongJohn Taichung • MADE-BY • NimkarTek Technical Services PVT LTD • Ningbo Shenzhou Knitting Co. Ltd. • OEKO-TEX® • Outdoor Industry Association (OIA) • Society of Dyers and Colourists • Solidaridad • Sustainable Apparel Coalition (SAC) • Swedish Chemicals Agency (KEMI) • Taiwan Chemical Industry Association • Taiwan Textile Federation • Verband TEGEWA e.V. • United Nations Environment Programme (UNEP)

For those interested in following our progress, you can reach out to us with specific questions or join our mailing list to stay apprised of our activities at info@roadmaptozero.com. To keep you up-to-date, we also will continue to post information on www.roadmaptozero.com.

Thank you for your interest, your input and your support.