Joint Roadmap: Toward Zero Discharge of Hazardous Chemicals

Draft for Consultation

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1. Introduction

1.1 Group Commitment and Joint Roadmap

By issuing the following joint roadmap (a living document), adidas Group, C&A, H&M, Li Ning, NIKE, Inc., and PUMA further demonstrate our commitment to collaborate and lead the apparel and footwear industry towards zero discharge of hazardous[1] chemicals for all products across all pathways in our supply chains by 2020.

This roadmap is based on statements that were issued on an individual basis by each of the founding brands. In the future, the intention is that all public individual statements conform to one model statement, which is currently in development.

Any company or entity wishing to join the collaborative process is invited to publish an individual statement and sign up to the roadmap. In doing so, the entity commits itself to support the group and to dedicate resources towards implementation of the roadmap.

This joint roadmap is made in the context of assumptions shared by the brands that may not be apparent to those outside the industry. Please refer to the Annex 1, 'Clarifications and Challenges' that underpin this roadmap.

The roadmap has been developed under the inclusion and with the support of several expert organizations and a larger group of other brands in the industry. During the development of the roadmap an extensive research and outreach to a wide range of stakeholders has been done. The quality of the input we have received has been very high and a strong sense of collaboration has influenced the process. It is our belief that this roadmap is well balanced and realistic, yet very ambitious and challenging. We hope to continue receiving support from all stakeholders and constituencies as needed to be successful. For systemic change that moves our industry beyond compliance, many brands and the chemical industry must work in concert.

Furthermore, in developing this roadmap, several perspectives on complexity have been incorporated. There are several areas, where no apparent and global solution is available 'off the shelf'. Hence, in many cases, before a selection can be made, a mapping of existing requirements and tools will be needed, based on a well-defined and aligned set of criteria.

As a consequence, the studies and roll-out actions need to be carefully crafted in order to be effective long-term and in order to lead to conclusive results. This group of brands is considering a wide set of options to make the process as effective as possible, but there are considerable challenges. There is also the need for alignment within the committed group of brands and also with the larger constituency of brands and industry. A sound first time right approach will pay off in the long-term perspective, especially where the roll-out of the plan has to be applicable worldwide.

The Joint Roadmap is very challenging, but also represents a landmark opportunity to contribute to a cleaner environment and to safe and secure conditions for people. This *Joint Roadmap Toward Zero Discharge of Hazardous Chemicals* is the first in a series of communications by this group of brands. Each communication will build upon the outcomes and learning from previous efforts, as we believe that this approach will bring

[1] Hazardous chemicals are those that show intrinsically hazardous properties (persistent, bio-accumulative and toxic (PBT); very persistent and very bio-accumulative (vPvB); carcinogenic, mutagenic and toxic for reproduction (CMR); endocrine disruptors (ED); or equivalent concern), not just those that have been regulated or restricted in other regions.

credibility and the greatest positive impact to our industry. Likewise the actions foreseen in the roadmap have deliverable timelines, including the setting up intermediate targets and milestones for subsequent phases.

1.2 Principles and Definitions

While definitions vary slightly between individual brand statements, key principles that underline this joint roadmap are as follows:

Zero discharge: Elimination of all releases, via all pathways of release, i.e. discharges, emissions and losses, from our supply chains and our products. In light of the increasing sophistication of analytical tools and methods, references to "elimination" or "zero" must be understood as "not above background concentration" rather than "not detectable."

Precautionary principle: The Precautionary Principle means that when (on the basis of available evidence) an activity may harm human health or the environment, a cautious approach should be taken in advance – even if the full extent of harm has not yet been fully established scientifically. It recognizes that such proof of harm may never be possible, at least until it is too late to avoid or reverse the damage done. The process of applying the Precautionary Principle must involve an examination of the full range of alternatives, including, where necessary, the development of sustainable alternatives where they do not already exist.

Right to know: Defined as practices that allow members of the public access to environmental information – in this case specifically about the uses and discharges of chemicals based on reported quantities of releases of hazardous chemicals to the environment, facility-by-facility, year-by-year.

2. Approach

If we are to deliver lasting solutions, our actions need to be guided by transparency, fact-based decision-making and based on a preventative, precautionary and integrated approach to chemicals management.

The founding group of brands have developed this roadmap to detail specific programmes and actions that we can take collectively with other brands to drive our industry toward the goal of zero discharge of hazardous chemicals.

This goal demands the collective action of industry and other stakeholders. We believe that the elimination of hazardous chemicals needs not only collaboration and partnership with our industry peers, but also a holistic and integrated approach. We will apply value-chain as well as life-cycle thinking and innovation throughout this process and adopt an approach for integrated chemicals management.

The road to zero discharge of hazardous chemicals by 2020 is a significant challenge; however, we see this as an opportunity to make a positive change to our industry. To maximize our impact, we must understand and positively impact a broad list of challenges that include:

− Our contract manufacturing model (i.e. we own little to none of the factories and suppliers that manufacture our products).

− The complexity of our supply chain (i.e. 1,000's of direct contract partners and 10,000's of material suppliers, in multiple tiers).

− Hundreds of individual chemicals are used at each material supplier.

− Limited visibility into the formulation of preparations (mixtures of chemicals) used by suppliers, in particular incomplete information on hazardous ingredients in MSDS (Material Safety Data Sheets).

− Chemical preparations of lower quality (often containing unwanted ingredients) are in direct competition with better alternatives.

− Directly controlling chemical formulations deep into the supply chain (suppliers of suppliers to factories) has not previously been attempted by brands.

− Large volumes of water used in dyeing/finishing and other processes.

− Facility by facility wastewater treatment (rather than centralized wastewater treatment).

− Import/export barriers for chemicals and technologies.

3. Scope

3.1 Introduction to scope alignment for pilots and roll-out

The joint roadmap covers the discharges from the full supply chain for all products by 2020. However, in order to approach the implementation of our commitment in a practical way, we have defined an engagement timeline for the inclusion of supply chain, product and geographic scope.

We set forth below the timeline for our engagement efforts for our supply chains and products, and also outline the geographic focus for our efforts.

We distinguish between the scope for pilot studies and the scope for the actual roll-out. Our pilot studies will be designed with the purpose to be relevant, comprehensive and scalable, but with the smallest possible number of suppliers or other entities in order to achieve the purpose. We do not intend to conduct pilot studies at hundreds of suppliers. Such an approach would not be effective. When a pilot study is proposed, the intent will be to create a better tool or add knowledge that can increase the effectiveness and speed of adoption of a broader rollout. The output of the studies will also inform and help set the performance standard needed for the industry as a whole. In this way focused efforts will have maximum, scalable effect.

Furthermore, we need to ensure an efficient approach in terms of avoiding duplication of efforts. We intend to focus more on apparel suppliers in the first pilot studies and then, step by step, enlarge the scope of the pilots, based on the findings within the apparel sector. This is necessary, since many pilots would be similar in their nature, albeit not identical between e.g. apparel and footwear. Wherever appropriate, e.g. for some materials, the pilots will be designed to cover both apparel and footwear segments.

However, from pilots, we plan to roll out solutions to all product and geographic ranges. We intend to maximize the impact of the learning or developed tools and solutions throughout the supply chain.

The first year of the roadmap, 2012, will be a significant year in terms of building the platform and the system for future success, as well as setting the benchmark for the industry. The 2020 timeline is incredibly ambitious, given the scope and global nature of what has to be achieved, in a span of only 8 years. To put this into perspective: similar initiatives such as PRTRs (Pollutant Release and Transfer Registers) or TRI (Toxics Release Inventory), with their attendant technical and scientific resources, have typically taken decades to achieve reductions in the use and discharge of targeted hazardous chemicals. The voluntary initiative detailed in this roadmap is attempting to achieve the same, across thousands of suppliers in more than 50 countries, globally.

3.2 Supply Chain Scope

-The pilot projects (see below) will initially focus on a selection of vertically integrated suppliers and other suppliers with wet processes and chemically intensive processes, including dye houses, for 2011-2013, as this is where we will have the greatest influence and impact. Licensee implementation may trail in the sequence of supply chain extension.

− Beginning in 2011, we (the undersigned group of brands will) communicate the mission of zero discharge of all hazardous chemicals to all factories and material suppliers (including licensees).

− Beginning in 2011, we will initiate continual education of the supply chain regarding hazardous chemicals to all factories and material suppliers (including licensees).

− Beginning in 2012, we will commence pilot projects to gain greater knowledge of hazardous chemical use and discharge in the supply chain.

− Beginning in 2012, based on knowledge gained from the pilot projects, we will extend chemical management programs to the full supply chain. We will begin elements of chemical management (e.g. education, communication on restrictions) in 2011 and expand and improve through 2020.

− We will continue to engage our supply chains via wider initiatives on raw materials such as cotton and leather.

3.3 Product Scope

- From 2012 to 2013, we will be targeting textile production, the learning from pilot projects will be rolled into programs across all product types from 2013 forward. Licensee implementation may trail in the sequence of supply chain extension.

- As appropriate and applicable, footwear production will be included into the pilot projects, e.g. for materials that are common to both apparel and footwear.

3.4 Geographic Scope

− The initial pilot/program will be designed to cover a relevant portion of the business volumes for our brands, and we will look to target facilities shared by our brands. We will initially focus on a subset of countries that may include China, Philippines, Taiwan, Bangladesh, Thailand, India and Indonesia.

4. Targeting the Release of Hazardous Chemicals

4.1 Introduction

We will segment our approach to reducing and eliminating the discharge of hazardous chemicals into two categories:

a) 11 priority chemical groups

b) other hazardous chemicals restricted or controlled under national legislations, identified by appropriate existing black lists, or as identified by hazard/use screening protocol

4.2 11 Priority Chemical Groups

Of the 11 priority chemical groups, **nine** are currently restricted in all our products and thus we believe the potential for discharge is low. These chemical groups are:

− Phthalates (ortho-phthalates)

− Brominated and Chlorinated flame retardants

− Azo dyes[2]

− Organotin Compounds (e.g. TBT)

− Chlorobenzenes

[2] Those Azo dyes that may release carcinogenic amines as defined in Annex XVII of REACH

- Chlorinated Solvents

- Chlorophenols

- Short-Chained Chlorinated Paraffins (SCCPs)

- Heavy Metals (cadmium, lead, mercury, chromium (VI))

We will undertake the following projects to address these chemical groups:

- By the end of 2012, we will benchmark and verify whether the above nine classes of chemicals are not in discharge to water or sludge through a carefully designed process of on-site visits and audits, inventories, and analytics where appropriate.[3]

- By mid-2013, we will develop an action plan to address phase-out of any of the nine chemicals that are found from this benchmarking study.

APEOs/NPEs are the 10th chemical group in our 11 priorities, and are broadly used across multiple industries. They may also be broadly used in textile and leather manufacturing processes, and thus, the potential for discharge is higher. Scouring/degreasing and detergents are believed to be the greatest, but not the only, source for this group of chemicals in our supply chain.

We will undertake the following projects to address APEOs/NPEs:

- By the end of 2011, we will communicate to all suppliers the requirement to source preparations that are APEO/NPE free. (Note: We believe conversion for detergents/ scouring/ degreasing could yield a reduction of up to 50% of APEO/ NPE in Apparel/ Footwear supply chains.)

- In early 2012, we will initiate a project with chemical suppliers to identify a 'positive list' of APEO/NPE-free detergents.

- In 2012, we will conduct a follow-up study at a selection of facilities that have converted to APEO/NPE-free detergents to evaluate if there are remaining sources including non-intentional uses etc. of these chemicals. (This study recognizes challenges including a lack of transparency into chemical ingredients and poor quality material safety data sheets (MSDS)).

Perfluorinated Chemicals (PFCs) are the 11th priority group, and are widely used in multiple industries for water repellency and/or stain repellency.

We will undertake the following project to address perfluorinated chemicals:

- By the end of 2012, we will confirm, or set timelines for the elimination of products that are associated with PFOA and PFOS. This program will initially focus on replacing C8 fluorinated water repellent chemistry with alternative technologies including short-chain fluorochemical water repellents approved by global regulators (e.g. fluorotelomer-based C6 technology).

4.3 Hazardous Chemicals Beyond the Priority 11

Beyond the 11 priority chemical groups listed above, we will undertake a number of projects toward the goal of zero discharge of hazardous chemicals by 2020. These steps include:

[3] Air sampling is not planned for this study

- Development of a comprehensive inventory of chemicals used in apparel/footwear manufacturing.
- Assessment of the hazards of these chemicals.
- Support for a transition to the use of preferred (greener) chemicals.

Details for this group of chemicals will be defined in future roadmap updates.

4.4 Comprehensive List of Chemicals

– In 2012 we will develop a comprehensive inventory of chemicals used in textile manufacturing. Due to the lack of transparency and the complexity of such a large number of chemicals, this inventory will be generic. It is not intended to cover chemical by chemical per facility, but the results of this list will inform the potential for a facility-by-facility program. This list will attempt to identify all the chemicals used. Screening for hazard and their use (fate) will help determine how chemicals should be managed or when necessary targeted for elimination.

4.5 Assessing Hazards of the Chemicals

– By mid-2012, we will identify and agree to a cross industry-screening tool for chemical hazards.

– Beginning in early 2013, we will determine a plan to evaluate the chemical inventory by intrinsic hazard and establish a sector wide list of hazardous chemicals. This list will be used to do a gap analysis and identify the alternative (greener) chemical formulations that are needed.

4.6 Defining prescribed chemistry

We will expand our current efforts of prescribing alternative (greener) chemistries to be used on our products. Current examples include water-based adhesives and water-based inks.

5. Tools and Protocols

5.1 Introduction

As part of this joint roadmap, the brands will collaborate to develop new and refine existing tools and protocols that are needed to advance this initiative.

5.2 Audit Protocols

– We will develop a joint generic audit approach for environmental performance (including chemicals management) with the possibility for brands to, within legal confines, share supplier results between brands. We will prioritize facilities to be audited by a number of factors including environmental risk. As we are competitors, it is understood that sensitive information may only be shared on the basis of binding Non-Disclosure Agreements and that some information may be unfit to share amongst competitors.

– By the end of 2013, we will develop a shared dye house and printer audit protocol with a competent third party.

– By the end of 2014, within legal confines, we will develop a program to incentivize suppliers to fulfill the dye house and printer audit protocol (e.g. Leather Working Group (LWG)).

5.3 Restricted Substances Lists (RSLs)/Manufacturing Restricted Substances Lists (MRSLs)

– The expansion of individual/collective RSLs and MRSLs will continue indefinitely based on our work above, and nothing in this roadmap is intended to restrict the ability of the companies to separately implement individual discharge plans, as may be required by legislation or regulation or otherwise.

5.4 Training

– We will collaborate on joint training efforts and knowledge transfer (e.g., Leather Working Group (LWG), Apparel & Footwear International RSL Management Group (AFIRM), Outdoor Industry Association (OIA) Chemicals Management Working Group (CMWG), Sustainable Apparel Coalition, SAC).

– By the end of 2012, we will deliver a joint pilot training program in one or more of the countries named above.

6. Disclosure and Communication

In order to achieve our goal of zero discharge of hazardous chemicals, mechanisms for disclosure and transparency about the hazardous chemicals used in our global supply chains are important and necessary. Disclosure, in line with right to know principles, will be among the most challenging of issues as we continue towards the goal of zero discharge of hazardous chemicals by 2020. Although we see potential value in disclosure, we also believe that the strategy must be appropriate in order to achieve the desired impact. We wish to move the industry to a new level in terms of transparency in chemical usage, but we must also understand the technical capacity and cost and regulatory implications for individual suppliers to meet this expectation. We need to anticipate and address questions of competitive advantage and the need to establish a level playing field across each industry sector, as suppliers work towards the goal of zero discharge.

We will undertake the following projects on disclosure:

- In 2012, we will convene a cross sector group to explore the best ways to encourage sector wide supplier chemical disclosure. We will also deliver a study based on data collection from a select group of facilities.

– In 2012 we will explore platform options for suppliers to disclose their chemical inventory under the assumption that disclosing their inventory will have a positive effect.

– On an ongoing basis, we will disclose the results of all studies undertaken as part of this initiative (without reference to specific facilities).

– In 2012, we will provide joint quarterly updates to projects/programs, and from 2013 publish annual performance updates on the roadmap. Each end of year update will be open for comment and feedback from key stakeholders.

- In 2012, we will publish an updated roadmap, based on the experience we have gathered throughout 2012 and on input from all stakeholders.

- We will continue to update the individual brands Restricted Substances Lists (RSL) and Manufacturing RSL (black list) and associated testing protocols.

7. Antitrust

As we are competitors, this roadmap assumes all joint activity will be undertaken in compliance with applicable antitrust or competition laws and regulations. It is understood amongst the group that full compliance with these regulations may prevent exchange of certain information between us.

8. Summary of Roadmap Projects

The table below summarizes the major actions to be taken based on this roadmap and their relative impact on the issues of inventory, disclosure, elimination, and verification.

	Categorization of Roadmap Element				
Roadmap Element	**Inventory**	**Disclosure**	**Elimination**	**Verification**	**Supply Chain Coverage**
Benchmark study whether 9 classes of chemicals not in discharge to water or sludge using on-site visits and audits, inventories, and analytics where appropriate.	○	○	●	●	Pilot
Develop action plan to address phase-out of any 9 chemical classes found in benchmark study.	○	○	●	●	100%
Communication to suppliers to source APEO/NPE free preparations, initiate project to identify 'positive list' of APEO/NPE free detergents.	○	○	●	○	100%
Conduct follow-up study at selection of facilities that have converted to APEO/NPE free detergents to identify remaining sources.	○	○	●	●	Pilot
Confirm, or set timelines for the elimination of products that are associated with PFOA and PFOS by replacing C8 fluorinated water repellent chemistry with alternative technologies including short-chain fluorochemical water repellents approved by global regulators.	○	○	●	○	100%
Develop a comprehensive, generic inventory of chemicals used in textile manufacturing.	●	●	●	○	100%
Identify and agree to a cross-industry screening tool for chemical hazards.	●	●	●	○	100%
Establish a plan to evaluate the chemical inventory by intrinsic hazard and establish a sector wide list of hazardous chemicals.	●	●	●	○	100%
Expand our current efforts of prescribing alternative (greener) chemistries to be used on our products.	○	○	●	○	100%
Develop a joint generic audit approach for environmental performance (including chemicals management).	○	○	◉	●	100%
Develop a shared dye house and printer audit protocol with a competent third party.	○	○	◉	●	100%
Within legal confines, develop a program to incentivize suppliers to fulfill the dye house and printer audit protocol.	○	○	◉	●	100%
Continue expansion of individual/collective RSLs and MRSLs.	○	○	●	◉	100%
Develop shared approach with 3rd party for dye house and printer audit	○	○	◉	●	100%
Collaborate on joint training efforts and knowledge transfer and deliver a joint training program in one or more countries.	◉	◉	◉	◉	100%
Convene cross sector group to explore the best ways to encourage sector wide supplier chemical disclosure and deliver a study based on data collection from a select group of facilities.	●	●	●	○	Pilot
Explore platform options for suppliers to disclose their chemical inventory under the assumption that disclosing their inventory will have a positive effect.	●	●	●	○	Pilot

Scale of Impact

Low	○
Medium	◉
High	●

Signed by adidas Group, C&A, H&M, LiNing, NIKE Inc., PUMA

Annex 1. Clarifications and Challenges

Explanation of the Joint Roadmap Toward Zero Discharge of Hazardous Chemicals

Purpose of this annex

This annex aims to explain the challenges and potential obstacles that the signatory brands face in committing to the goal of phasing out the discharge of all hazardous chemicals from their supply chains by 2020. By doing so, we explain why the joint roadmap must initially focus on certain priority areas while not compromising on the end goal of zero discharge by 2020.

Analytics and Chemistry

The companies would like to emphasize that as analytical tools and methods are getting ever more sophisticated, the term zero has to be defined as “not above background concentration” rather than “not detectable.”

Furthermore, many chemical formulations and products are subject to proprietary information. Therefore, the committed companies expect it may take some time to convince chemical companies to disclose the full recipes and content of dyeing chemicals or other typically used chemical products.

We expect that impurities and cross-contamination from byproducts (such as, for example, cleaning chemicals or lubricants) will potentially result in very low concentrations of hazardous chemicals which were never intended for use in the textile industry but nevertheless have to be eliminated to achieve the goal of zero discharge.

Lastly, the replacement of certain chemicals may have an impact on the performance of products. Therefore, such replacements must be undertaken following a detailed and deliberate testing and quality control process

Scope

The joint roadmap covers the use and discharges from the full supply chain for all products by 2020. However, in light of the enormous challenge to phase out the use and discharge of all hazardous chemicals and even potentially hazardous chemical substances from the production of apparel, footwear and accessory goods, a pragmatic and “workable” approach is required, particularly as such a project has never been undertaken before in our sector.

Geographic Scope

The initial pilot/program will be designed to cover a relevant portion of the business volumes for our brands, and we will look to target facilities shared by our brands. We will initially focus on a handful of countries including China, Philippines, Taiwan, Bangladesh, Thailand, India and Indonesia.

Apparel Pilot Project

For both practical and expedience reasons, we will start the pilot with apparel, and will use this experience to efficiently expand the scope to footwear and other product categories.

Influence in Our Supply Chains

Vertical apparel producers as well as dye houses are one of (if not the) the major sources of potential chemical aquatic pollution among all industry-specific manufacturing processes within the apparel and sporting goods industry.

Our level of influence is highest with direct suppliers (i.e. direct contract partners) and declines with each tier down within the supply chain. It is important to note that a contractual relationship (and therefore clear leverage for brands) exists only at the direct supplier level.

Hence a focus on direct suppliers as well as nominated material suppliers for the first phase of the project will increase our chances for success.

Many suppliers produce for more than one brand, so even if one brand decides to phase out a chemical, the supplier may still need to use it if nominated by another brand/customer.

Indeed it is thus in our best interest to get additional brands to join this roadmap effort.

While our first pilot will target selected vertical suppliers and dye houses, we plan to expand the scope later to cover the majority and ultimately all apparel suppliers.

Timelines

Given the magnitude of the challenge ahead, the group views the timelines set in this joint roadmap document as ambitious, and we ultimately share the ultimate goal of zero discharge by 2020.

In this context, we would like to emphasize that the capacity of chemical laboratories in Asia to conduct the required testing still has to be developed.

Furthermore, the lack of specific information on which chemicals are in use in certain formulations will mean a time consuming dialogue with single chemical manufacturers is needed to produce a complete chemicals inventory.