

2014 FRAMEWORK FOR THE PRIORITISATION OF HAZARDOUS CHEMICALS

JOINT ROADMAP
VERSION 2
REVISION 1 | MILESTONE

Ø ZDHC

ZERO DISCHARGE
OF HAZARDOUS
CHEMICALS PROGRAMME



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Framework for the Prioritisation of Hazardous Chemicals

The Zero Discharge of Hazardous Chemicals (ZDHC) Joint Roadmap (2013) acknowledges the need to evaluate chemicals used in the apparel and footwear industry¹ and establish a sectorwide list of hazardous chemicals to be further addressed by the ZDHC Group.

Workstream 1 of the Joint Roadmap (2013) addresses the need for a technical focus on chemicals critical to achieving the zero discharge goal. In this workstream, the ZDHC Group committed to delivering work products in three focus areas, specifically chemical hazard assessment and prioritisation and assigning phase out or research actions. The Workstream 1 objectives (noted in Figure 1) are summarised as:

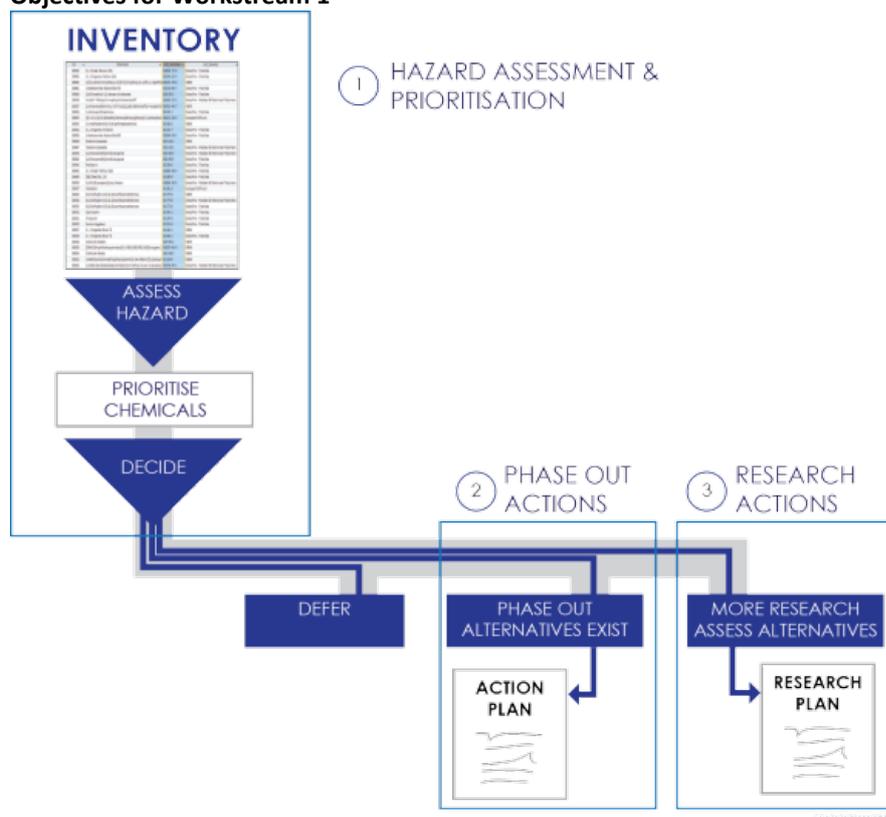
Hazard Assessment and Prioritisation. Develop a transparent, validated process to prioritise hazardous chemical substances used in the apparel and footwear supply chain and publish a list of chemicals for immediate further action for phase out or research.

Phase Out Actions. Develop key action plans against hazardous chemical substances that the group has identified for elimination or substitution.

Research Actions. Encourage research and development of safer and more sustainable alternatives if none currently exist.

This document presents the framework developed for the Hazard Assessment and Prioritisation task.

FIGURE 1
Objectives for Workstream 1



¹ **Apparel and footwear industry.** We have assumed that the scope of the “apparel and footwear industry” includes the whole supply chain from fiber production to consumer product. If the chemical is an intermediate or monomer, used by the chemical industry, there is an opportunity to include this in the database.

Framework Background

In March 2013, the ZDHC programme partnered with the Outdoor Industry Association (OIA) to develop a chemical hazard assessment approach specific to the apparel and footwear industry. The framework defined in this document describes the overall, transparent process of assessing chemical hazard and allows for the use of publicly available, transparent hazard assessment tools.

Methodology

Database Development

The ZDHC Group published a database of chemicals (at the CAS number level) used in the apparel and footwear industry in 2012. To further focus the database of thousands of chemicals for the prioritisation exercise, a pared down list of restricted chemicals was identified as a starting point. The list was a subset to chemicals appearing on restricted or watch lists, such as the bluesign® system substance list (BSSL), brand restricted substance lists (RSLs), the Substitute it Now (SIN) list (www.chemsec.org/what-we-do/sin-list/sin-database) and the KEMI hazardous chemicals in textiles list (noted on page 64 of www.kemi.se/Documents/Publikationer/Trycksaker/Rapporter/Rapport-3-13-textiles.pdf). The group filtered the SIN list by *use in textiles* and *highest volume* to pare it down to relevant chemicals.

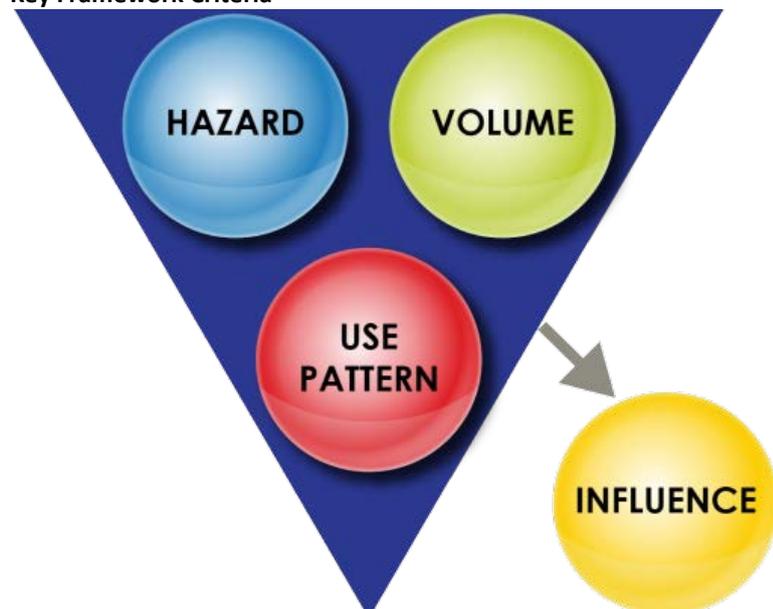
Prioritisation Criteria

The ZDHC Group developed a prioritisation framework based on existing frameworks and guidance. The framework may require continuous improvement and will be modified and adjusted as additional information becomes available or global chemical legislation changes.

The framework takes into account three main criteria (Figure 2) to prioritise chemical substances, specifically hazard, volume and use pattern. After considering the three criteria, the group examined the influence that ZDHC might have in taking action to phase out or find alternative chemical substances. Descriptions of the criteria details for each category are listed below.

FIGURE 2

Key Framework Criteria



Hazard Criteria

Hazards will be assessed using the GreenScreen® List Translator (<http://www.greenscreenchemicals.org/method/greenscreen-list-translator>). This tool is comprised of more than 450 lists from 36 primary authoritative and screening sources, including national and international regulatory and hazard lists, influential NGO lists of chemicals of concern (known as screening lists), authoritative scientific bodies, European Union risk and hazard phrases/statements and chemical hazard classifications by countries using the Globally Harmonized System of Classification and Labelling of Chemicals.

GreenScreen® classifies the most hazardous chemicals as Benchmark 1. This includes those chemicals that are:

- Persistent, bioaccumulative and toxic
- Carcinogenic, mutagenic and reprotoxic
- Endocrine disruptors of equivalent concern

Using the GreenScreen® List Translator, ZDHC developed the hazard ranking described below.

ZDHC Hazard Ranking

- **High** **LT-1 (Benchmark 1)** - A LT-1 chemical score is based on authoritative lists that indicate that the chemical is a Chemical of High Concern and is likely to be considered a Benchmark 1 chemical using the full GreenScreen® method. In addition, chemicals that show endocrine activity will also be placed in the ZDHC high hazard ranking category even if their resulting GreenScreen® List Translator score is a GreenScreen® Possible Benchmark 1 (LT-P1).
- **Medium** **LT-P1 (Possible Benchmark 1)** - A LT-P1 chemical score translates to Possible Benchmark 1 and reflects the presence of the chemical on screening lists and some uncertainty about the classification for key endpoints.
- **Low** **LT-U (Unspecified [U] Benchmark)** - A LT-U chemical score indicates that there is insufficient information to provide a benchmark score for the chemical. Typically, only known hazardous chemicals are found on authoritative and screening lists. However, lack of presence on hazard lists can also mean that the hazard of the chemical has not been fully characterised. Therefore, the resulting conclusion using the GreenScreen® List Translator is that the Benchmark U score is unspecified pending a full GreenScreen® review.
- **No Data** Need further data

Research and implementation of the best available data and methodology for assessing hazardous chemicals is a priority for the ZDHC Group. The criteria to evaluate hazard will be reviewed continuously and we will make adjustments to the framework as assessment tools continue to evolve.

Volume Criterion

Volume is an important criterion to consider in an apparel and footwear prioritisation exercise, since it indicates how pervasive a given substance is in the supply chain. However, the volume of a specific substance used in the industry can be very difficult to identify. Given this challenge, we have initially relied on qualitative information and industry experts to help gauge the volume of the chemical used.

The categories for volume are:

- High
- Medium
- Low

Use Pattern Criterion

The third prioritisation criterion focuses on how a substance may be used or appear in the global supply chain. The categories for use pattern are:

- High Intentional commercial and consumer use (worker, environmental, community)
- Medium Intentional industrial use (chemical industry/fiber formation)
- Low No intentional use (intermediates, by-products, trace)

ZDHC Influence Criteria

Levels of ZDHC influence depend on where a chemical is used in the apparel and footwear supply chain and the contractual relationship that ZDHC members have with their respective suppliers. The influence filter’s purpose is to focus the ZDHC Group’s efforts on substances that the group can influence quickly and to identify potential collaborations or supply chain stakeholders that may be needed to initiate action on a chemical substance.

The categories for influence are:

- High
 - Finished goods manufacturing
 - Textile/material processing (dyeing, washing, finishing, pretreatment)
- Medium
 - Fiber processing (extrusion, textile spinning)
 - Material preparation and formation (leather tanning, synthetic leather formation)
 - Polymer and metal alloy production/recycling from trim parts
- Low
 - Raw material processing (cotton growing, cattle and sheep rearing/slaughterhouse)
 - Chemical industry intermediates (impurities, contaminants, unintended by-products)

The overall prioritisation framework combines the categories above as follows:

Hazard, Volume and Use Pattern Criteria

HIGH	MEDIUM	LOW
All three criteria are high	At least two criteria are high	At least one criteria is high

Chemicals that are not prioritised for further action, based on the ranking system above, will therefore not pass through the influence filter. Instead these chemicals will be returned to the database and re-evaluated at a later date.

ZDHC Influence Criteria

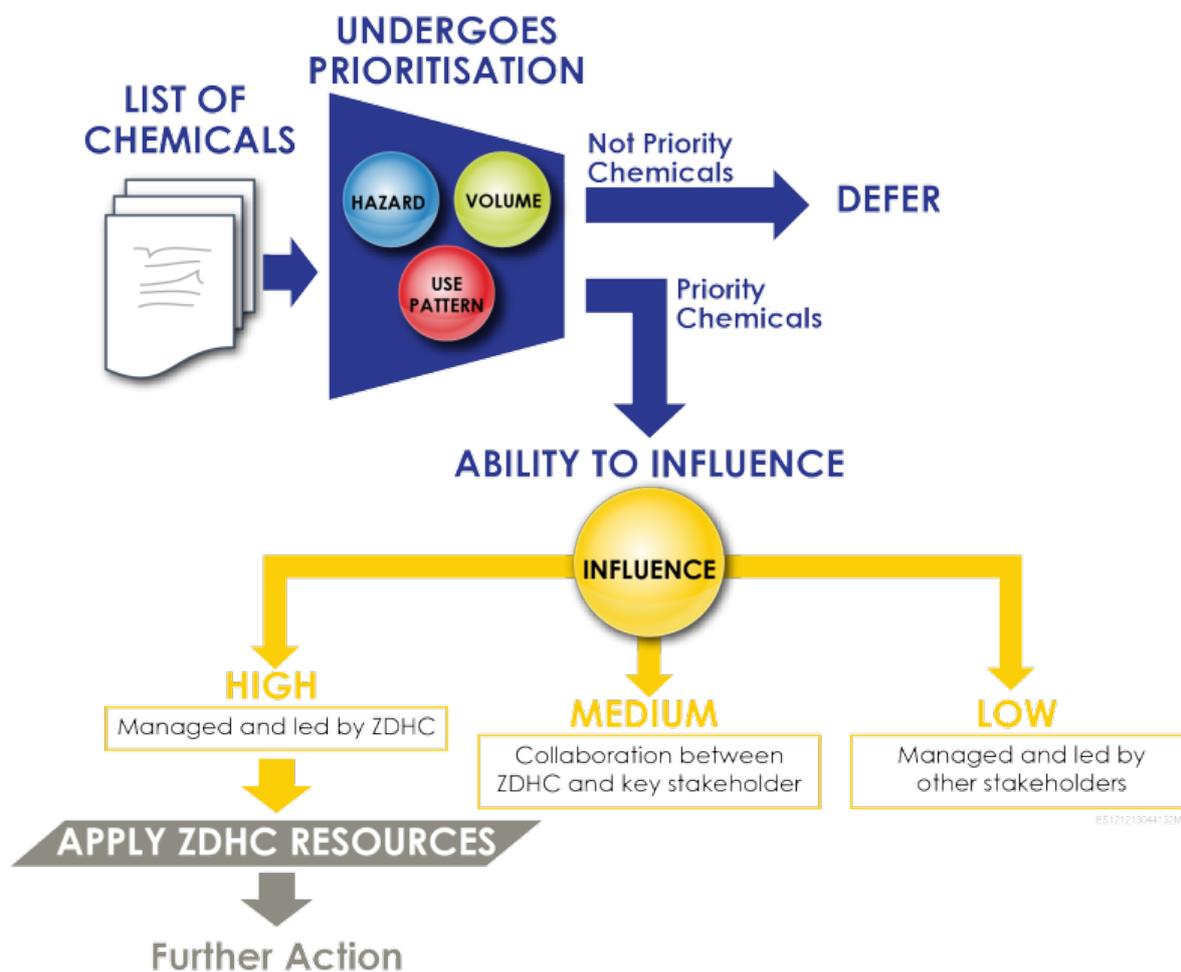
HIGH	MEDIUM	LOW
Managed and led by ZDHC	Collaboration between ZDHC and key stakeholder	Managed and led by other stakeholders

A depiction of the prioritisation process is shown in Figure 3. The three prioritisation criteria work in concert to help focus the ZDHC Group’s effort. Once a list of chemical substances is identified using the framework, it will be revisited annually to reflect new information. A chemical that is attributed a lower priority regarding influence, will not be removed from the list. This lower priority designation simply indicates there are other substances the ZDHC Group should address before the lower

priority substances, and those that we believe we can influence more quickly, to create logical and workable change within the industry.

Developed and assessed in collaboration with the ZDHC Technical Advisory Committee and other industry stakeholders, the framework creates a transparent and technically-sound chemical prioritisation hierarchy. As work continues toward 2020, the prioritisation framework will provide a consistent way for ZDHC to align and address the most pressing issues related to the group’s ambitious goal.

FIGURE 3
Prioritisation Process



Further Action

The focus of the prioritisation framework is to identify the high priority hazardous chemicals and apply actions to them. Using the framework, the ZDHC group will decide if chemicals can move directly onto an MRSL or if they will need to move to a list for further research. Chemical substances will be placed on an MRSL if safer alternatives currently exist. Chemicals without safer alternatives available for the various supply chain uses will be placed on the Research List. The ZDHC Group is committed to working with key stakeholders to research, develop and implement safer alternatives for these chemical substances. Providing substitutes for some of these chemicals may take many years, but by publishing the list and actively partnering with other industry influencers, we hope to catalyse change in the industry.