ZDHC MRSL Update Principles and Procedures

ZDHC

The Roadmap To Zero Programme

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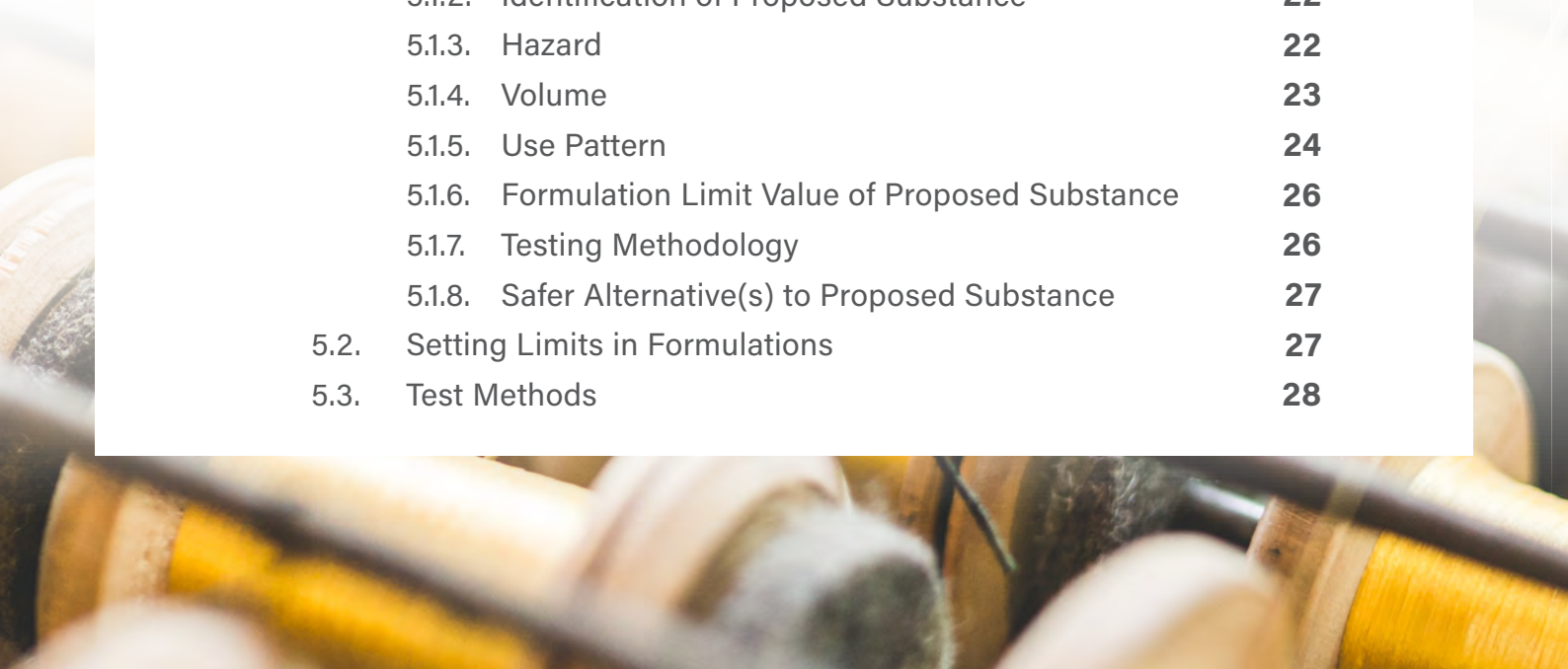


Foreword

The ZDHC Manufacturing Restricted Substances List (MRSL) is a list of chemical substances banned from intentional use in facilities that process textile materials and trim parts in apparel and footwear. As the ZDHC MRSL is a living document, it is updated as needed to expand the materials and processes covered and to add substances that should be phased out of the value chain. This Principles and Procedures document contains and explains the process used to update the ZDHC MRSL.

The Principles and Procedures should also ensure that the update process remains transparent, inclusive and efficient whilst keeping in mind that the updates should reduce hazard and impact based on the best available information.

The ZDHC MRSL establishes acceptable concentration limits for substances in chemical formulations used within manufacturing facilities. The limits are designed to eliminate the possibility of intentional use of listed substances. The intent of the ZDHC MRSL is to manage the input of chemicals to the suppliers and remove those hazardous substances from the manufacturing process.

We would like to extend our special thanks to the following people, without whom this document would not have been possible: Thomas Schäfer (Bluesign); Dr. Joel Tickner (University of Massachusetts-Lowell); Linda Greer (NRDC); Phil Patterson; the ZDHC MAC; ZDHC Technical Review Task Team and the ZDHC Contributors.

1. Introduction

The **ZDHC Roadmap to Zero Programme** is a holistic approach to chemicals management **in the apparel and footwear supply chain** and is organised around Input, Process and Output Focus Areas. Taken together, these **Focus Areas** work to develop and maintain the current ZDHC tool set and guidelines, develop integrated platforms for chemicals management data disclosure and look for opportunities to expand the ZDHC tool set and guidelines for better chemicals management.

The **Input Focus Area** develops and manages tools and guidelines that are the cornerstone of the ZDHC Roadmap to Zero Programme - those that seek to change the way products are made by restricting input chemicals rather than permitting their use and subsequently removing them from effluents. These tools include ZDHC Manufacturing Restricted Substances List (ZDHC MRSL), ZDHC Gateway - Chemical Module, ZDHC ChemCheck™ report and ZDHC InCheck™ report.

The **Process Focus Area** develops and manages tools and guidelines designed to assist with good chemicals management practices and harmonised supply chain implementation of ZDHC tools. This includes development and maintenance of tools designed for assessment of supply chain such as the Chemicals Management Module of the HIGG Facilities Environmental Module (FEM) and those designed to help suppliers better manage chemicals such as the ZDHC Chemical Management System (CMS) Guidance.

The **Output Focus Area** supports and verifies the work of the Input and Process Focus Areas. This includes the development and ongoing maintenance of the ZDHC Wastewater Guidelines and related tools such as the ZDHC Gateway - Wastewater Module and the ZDHC ClearStream™ report.

In 2014, the ZDHC Roadmap to Zero Programme developed and published its first Manufacturing Restricted Substances List (MRSL). In December 2015, the ZDHC Programme updated and published ZDHC MRSL Version 1.1.

As explained in the 2015 update[1]: The intent of the ZDHC MRSL is to provide a harmonised

[1] http://www.roadmaptozero.com/fileadmin/pdf/MRSL_v1_1.pdf

approach to managing chemicals within the apparel and footwear supply chain. The ZDHC MRSL achieves this by providing a clear list of priority chemicals that should not be intentionally used and specifying the maximum allowable concentration limit of each restricted substance within commercial chemical formulations, known as the ZDHC MRSL.

The ZDHC MRSL is a living guide that requires regular review and updating to meet the challenges of managing chemical use within the apparel, textile and footwear supply chain.

ZDHC is committed to the following objectives for updates of the ZDHC MRSL.

- **TRANSPARENCY**: meaning using a publicly transparent process for receiving and evaluating proposals to add chemicals to the ZDHC MRSL.

- **INCLUSIVITY**: meaning engaging stakeholders from ZDHC Contributors i.e. Signatory Brands, Value-Chain Affiliates (including the chemical industry, the textile and footwear industry and solution providers) as well as Associates such as non-governmental organisations and industry association/multi-stakeholder organisations. Further, any organisations and companies that are not ZDHC Contributors can be part of the update process through submitting proposals for additions to ZDHC MRSL.

- **BEST AVAILABLE INFORMATION**: meaning applying a science-based decision-making approach, that considers both the degree of hazard and extent of exposure potential in setting priorities using the best available information as well as allowing for the incorporation of significant new information to ensure prioritisation decisions remain as current as is possible.

- **REDUCE HAZARD**: meaning a regular update process that ensures hazardous chemicals are added to the ZDHC MRSL when viable alternative chemicals or processes become commercially available. The regular update process ensures a system of continuous improvement to add hazardous chemicals to the ZDHC MRSL ensuring that possible risk to human health and the environment is reduced where viable safer alternative chemicals or processes are commercially available, technically and economically feasible. For proposed MRSL additions that meet listing criteria but do not yet have safer alternatives at scale, innovation to find alternatives is encouraged by listing the substance on the ZDHC Candidate List with a sunset date. If a chemical substance is legally restricted in chemical formulations or as chemical substance then ZDHC may add this substance in

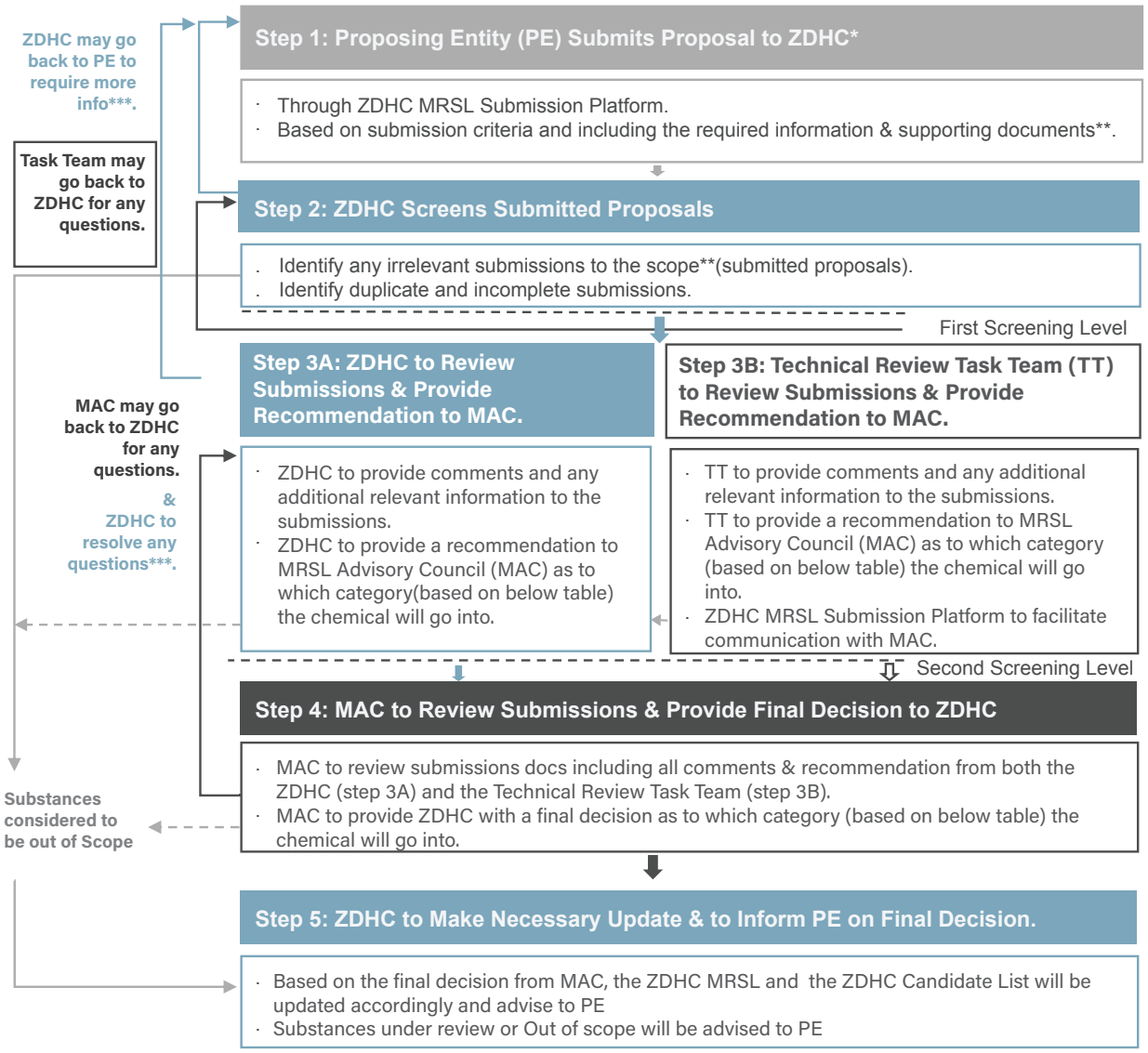
the ZDHC MRSL in absence of safer alternatives.

- **REDUCE IMPACT**: meaning keeping in mind that hazardous chemicals are one part of the overall sustainability of the industry and that reducing impact on people and the environment is the overarching goal. Therefore, the wider implications on water and energy use should also be taken into account when alternatives are evaluated.

- **EFFICIENCY**: meaning a timely and dependable cycle of review, based on the efficient use of the ZDHC organisational resources.

2. ZDHC MRSL Update Process at a Glance (Executive Summary)

While the following sections in the document describe the ZDHC MRSL Update process, principles and procedures in detail, this section provides a brief summary of the entire ZDHC MRSL Update Process in three pages. It starts with the process flowchart (Figure 1) and is followed by high-level descriptions. The review process will take place on an annual basis, this may include substances, limits, test methods and/or scope of the ZDHC MRSL.



* Regular Process only, excluding fast track
** Detailed information available in the P&P
*** Substances under review- pending further information

Figure 1: High level steps of ZDHC MRSL Update Process

A) ZDHC MRSL	B) ZDHC Candidate List
1. Adding new substance, OR 2. New manufacturing limit concentrations for substances previously listed on this list. *Inclusion will take place in the next/ following annual revision of ZDHC MRSL.*	For high-priority chemical substances lacking viable, safer, widely/readily available alternative chemicals or processes. *For each chemical substance included in this list, a specific time-scale for inclusion to the ZDHC MRSL or review will be indicated. E.g. "X will be added in 2025"*

Figure 2: Public Lists

Step 1:

A Proposing Entity Submits Proposal by Completing an Online Submission Form (will be made available in the ZDHC MRSL Submission Platform).

A Proposing Entity (PE) can be absolutely anyone. For example, it could be an individual, a chemical company, a dye-house, an NGO representing civil society, a professional body, the ZDHC Foundation, the ZDHC Input Focus Area team or Task Team, a ZDHC Contributor, an academic organisation or the MRSL Advisory Council. This is not an exhaustive list of all PEs. The submission criteria (see Section 5) address several critical areas including, but not limited to, relevance to apparel, textiles and footwear industry, estimates of the amount used in a specific scenario and in total across the industry, exposure and discharge scenarios and the presence of 'feasible/viable' substitutes.

Step 2:

ZDHC to Do a First Screening of the Submissions (i.e. proposals that have been submitted)

ZDHC will apply a sense check screening/filtering system to:

- Identify any submission with substances considered to be out of scope and exclude those submissions that have no relevance to apparel, textiles and footwear,
- Identify duplicate submissions, and
- Identify incomplete submissions.

This function will be carried out by a combination of using the screening of the online submission and the ZDHC Programme Management Team.

The PE will be informed if their submission

a) has been filtered out,

b) requires more information/data to be verified or

c) if it has gone through for review by the ZDHC (see Step 3A) and the Technical Review Task Team (see Step 3B).

Step 3:
Review and Assessment by ZDHC and Technical Review Task Team – Second Screening Level.

At this stage, ZDHC and the Technical Review Task Team (part of the ZDHC Input Focus Area) will conduct a second screening. Both groups will separately review, evaluate and assess the information on the submission document.

Step 3A. ZDHC to:

- Provide comments and any additional relevant information (submission criteria) to the submissions.
- Provide a recommendation to MRSL Advisory Council (MAC) as to which category (based on section 3) the chemical will go into.

All comments and recommendation from the ZDHC will be appended to the submission document via the ZDHC MRSL Submission Platform for review by the MAC (Step 4).

Step 3B. The Technical Review Task Team (TT) to:

- Provide comments and any additional relevant information to the submissions.
- Provide a recommendation to MRSL Advisory Council (MAC) as to which category (based on section 3) the chemical will go into.

TT does not need to attempt to reach a consensus opinion among themselves as a group, rather they will be able to send along all relevant comments and recommendation to the MRSL Advisory Council (MAC) as an individual or a (sub) group via the ZDHC MRSL Submission Platform. All comments and recommendation(s) from the TT will be appended to the submission document for review by the MAC (Step 4).

Additional relevant information could be additional data a company/organisation may have on usage, residual in product, feasibility of safer alternatives, test data, etc.

Step 4:

MAC to Review Submissions and Provide Final Decision to ZDHC

MAC (MRSL Advisory Council) will review the submission documents including the comments and recommendations provided by the ZDHC and Technical Review Task Team. MAC will then make a final decision as to which category (see section 3) the chemical will go into and inform the ZDHC Programme Management on their final decision. MAC will append their commentary to the submission document including the final decision, and it will be passed on to the ZDHC Programme Management Team.

Definition of each of the categories (i.e. ZDHC MRSL, ZDHC Candidate List, Substances under Review- pending further information or Substances considered to be out of Scope) is explained in section 3 of this document.

Step 5:

ZDHC to Make Necessary Updates and Inform the Proposing Entity

Based on the final decision from the MAC (MRSL Advisory Council) i.e. Step 4, the ZDHC MRSL and ZDHC Candidate List will be updated accordingly. It is envisaged that new chemicals, changes of limit and or scope, and time-scaled chemicals will be added or reviewed at the next scheduled or 20XX ZDHC MRSL revision.

ZDHC will inform the Proposing Entity (PE) what the outcome of their submission is and provide information to them regarding which category their chemical has been put in, and the main reason for the decision.

Roles & Responsibilities

Although the steps and roles of the different key stakeholders are presented in the process flow chart and the high-level description of the steps, there will be cooperation and collaboration between the ZDHC Programme Management Team, Technical Review Task Team (TT) and MRSL Advisory Council (MAC) as outlined below.

	ZDHC	Technical Review TT	MAC
1. Define submission criteria.	✓	✓	✓
2. Develop screening/sense check filter criteria to support Step 2. It will be a combination of automatic screening & ZDHC staff.	✓	✓	✓
3. Development and operation of online submission system and screening/sense check filter.	✓		
4. Detailed review of submissions.	✓	✓	✓
5. Evaluate submissions from Proposing Entity (PE). Provide comment, any additional info & recommendation on category.	✓	✓	
6. Review of submissions + comments, additional info and recommendations from ZDHC & Technical Review TT.			✓
7. Endorsement / non-endorsement of recommendations from ZDHC and Technical Review TT.			✓
8. Communication with Proposing Entity (PE).	✓		
9. Submission of potential chemicals for inclusion (being a Proposing Entity/PE).	✓	✓	✓
10. Instigate offline research to find more information about the chemical submitted. ZDHC, TT and MAC to start the process under Step 3 & 4.	✓	✓	✓
11. Annual review of existing ZDHC MRSL chemicals / limits and scope.	✓	✓	✓
12. Sign-off on final decision.			✓

3. Scope of ZDHC MRSL and the Different Categories

3.1. Scope

For now, the focus is on the apparel, textile and footwear supply chain (fibres, yarns, textiles, skins/leather, plastics, foams, adhesives and rubbers) and chemical formulations that enter a wet processing facility (see tier chart below). The wet processing facility in this context would include among others laundry facility, finishing facility, dye-house, printing facility and tannery.

The upstream use of chemicals in the chemical industry as intermediates in the production of chemicals is out of scope.

The appendices B & C will clarify the current scope of the MRSL on Materials and the Processes of Manufacturing.

3.2. ZDHC MRSL (ZDHC Manufacturing Restricted Substances List)

The ZDHC MRSL is a list of chemical substances banned from intentional use in chemical formulations used in facilities of the apparel, textile and footwear industry. Traces in chemical formulations used by these facilities should not exceed the limits specified in the ZDHC MRSL. This includes not only chemicals used specifically for production processes, but also cleaning supplies, machine cleaners, lubricants, etc. that are in use in the facility for maintenance and support.

The MSRL Advisory Council may also decide not to include a substance if it is an impurity or by-product. This decision will be priority based. The judgement will consider the use pattern or level of intentional use and, if not a priority substance, may be considered out of scope.

The ZDHC MRSL covers those hazardous chemicals relevant to the apparel, textile and footwear industry for which viable safer alternative chemicals or processes are:

- commercially available at scale,
- technically and economically feasible.

The above conditions will apply unless unforeseen circumstances require any immediate inclusion without safer alternatives.

The ZDHC MRSL is available to the public.

3.3. ZDHC Candidate List

By contrast to the ZDHC MRSL, the ZDHC Candidate List includes high priority chemical substances ***lacking*** viable safer alternative chemicals or processes that are either:

- commercially available at scale,
- technically and economically feasible.

The aim of creating the ZDHC Candidate List is to highlight the need and to encourage innovations in the industry.

The update process could result in an addition of a chemical substance to the ZDHC Candidate List with a sunset date for either inclusion or review. For example, "substance X will be added in the ZDHC MRSL in 2025".

The ZDHC Candidate List will be made public once available.

3.4. Substances Under Review- Pending Further Information

A submission that does not provide the critical required minimum data and information for the MAC to make a decision for a proposed update does not of itself invalidate the proposal. Proposing entities (i.e. individuals or groups who submit update proposal to ZDHC) in good faith may wish to bring a substance to the attention of ZDHC but have no means to supply the required data information for evaluation. However, to execute science-based decision-making for ZDHC MRSL updates, ZDHC must defer consideration of and decision-making on incomplete submissions.
The PE will be informed which data is missing and or unverified to aid in the data collection, once the information is available the proposal may be re-entered in the review process.

If these substances are identified by ZDHC as critical then ZDHC may ask for help from the wider ZDHC community for the data collection on the missing points. Depending on the merits of the information submitted to support the listing, these substances may at a later date be reviewed for inclusion in the ZDHC MRSL or ZDHC Candidate List.

Insufficient data will cause further study at the discretion and timing of ZDHC.

3.5. Substances Considered to be out of Scope

Substances considered to be out of scope (substances out of scope) are reviewed on three main criteria;

1. Use Pattern (textile, apparel and footwear industry- see scope 3.1)
2. Intentionally used in chemical formulations
3. Hazard

If there is no compelling evidence that a substance is used or can be present in formulations used in the manufacture of textile, apparel, and footwear then it will not be included in the MRSL.
To avoid unnecessary workload for the MRSL Advisory Council, ZDHC can decide to exclude such chemicals if sufficient information to back up this decision is available during earlier steps (please refer to Section 2 to understand all steps in the update process).

Example: the ZDHC MRSL does not cover the growing of cotton. Therefore, if the use of a proposed substance is only as pesticide on cotton farms, this proposed substance would be classified as out of scope.

If a chemical is used very infrequently, is very rarely present in formulations and/or levels are so low to be considered very low risk the MRSL Advisory Council may use their discretion to not include a chemical. If a substance is not added intentionally but is an impurity or by-product the same would apply.

If there is a lack of compelling evidence to support a claim that a substance is harmful then it will not be included in the MRSL. *For example*, if the substance is LT-U GreenScreen® and no other hazard information is available.

The judgement will be made by a group of industry- experts such as the MRSL Advisory Council, Technical Review Task Team or the ZDHC Programme Team. The decision will be explained to the PE by the ZDHC Programme Team. All Substances considered to be out of Scope will be communicated to the MAC for a final confirmation.

No decisions will be irrevocable – PE's (Proposing Entities) can resubmit with further supporting information and request re-appraisal.

4. Key Stakeholders and their Roles and Responsibilities in the Update Process

4.1. MRSL Advisory Council (MAC)

The MRSL Advisory Council is an independent group to ensure objective decision making and to use a science-based approach for the proposed substances.

Composition

- The MRSL Advisory Council is composed of no more than 12 technical experts from diverse segments of the apparel, textile and footwear industry, and other significant stakeholders. These include academia, solution providers, manufacturers, chemical industry, government, and non- governmental organisations (NGO) with relevant industry knowledge and experience.
- The group has a chairperson to manage and organise the group activities.

Roles, Responsibilities and Operating Principles

- The MRSL Advisory Council is a key component in the ZDHC MRSL update process. This group is responsible for reviewing and evaluating the submitted information based on the Submission Criteria (see section 5).
- This group reports (in writing) to ZDHC on its final decision for substances to be added to the ZDHC MRSL, ZDHC Candidate List, decide the substance is out of scope or advise there is information missing or unverified data, while complying to the Competition Law.
- The MRSL Advisory Council is expected to adopt the governance and operating principles outlined in the ZDHC Advisory Forum Playbook. This Playbook will be made available to the members only.
- The MRSL Advisory Council is primarily self-governing in carrying out its charge though administrative support may be supplied by ZDHC Programme staff.
- The MRSL Advisory Council is expected to manage disagreement constructively and must make every effort to obtain full consensus and alignment for its decisions. The MRSL Advisory Council is responsible for evaluating the evidence under a defined prioritisation scheme which can help foster consensus. Please refer to Appendix F

regarding guidelines on decision making, quorum and voting).

- The chairperson of the MRSL Advisory Council is responsible, among others, for leading, managing and organising group activities, coordinating group (conference) calls, being involved in managing group face to face meetings, and ensuring the group is independent of the ZDHC Input Focus Area and makes decisions in the best interests of the environment whilst being cognizant of industry

4.2. ZDHC Input Focus Area or Technical Review Task Team

Composition and objectives

- The ZDHC Input Focus Area (FA) consists of people from the ZDHC Contributors serving voluntarily. In general, this group of people supports the ZDHC Programme Management Team to achieve the goals set for the Focus Area.
- Within the ZDHC Input Focus Area there is a dedicated team of Co-leads. Working closely with the ZDHC Programme Management team, the Co-leads actively support and drive the execution of Focus Area deliverables.
- Within the ZDHC Input Focus Area there are several Task Teams formed to address different projects. The Task Teams are designed to actively deliver results for specific projects within the Focus Area.
- Contributors to ZDHC may volunteer themselves to join the Task Team. Once the review process starts ZDHC will no longer accept new members but they will be included for the next round.

Roles and Responsibilities in Relation to the ZDHC MRSL Update Process

- One of the Task Teams in the ZDHC Input Focus Area (FA) called Technical Review Task Team is specifically formed to support the ZDHC MRSL Update Process.
- The main task of the Technical Review Task Team is to objectively and efficiently evaluate the information on the submission document, to comment on and to add any additional relevant information that will aid the MRSL Advisory Council in making a final decision.
    - This could be additional data an organisation may have on usage, residual in product, feasibility of alternatives, etc.
    - The Task Team may include a recommendation that the chemical substance

goes into one of the categories (see section 3).
    - The Task Team will not attempt to reach a consensus opinion, rather the Task Team will send along all relevant comments (as a group or individuals) to the MRSL Advisory Council to aid them in review process and in making the recommendation.
- All comments from Technical Review Task Team will be appended to the submission document for review by the MRSL Advisory Council.
- The Technical Review Task Team does not have a formal vote in decision-making by the MRSL Advisory Council.
- The Technical Review Task Team periodically monitors whether any missing information for substances under Review- pending information has been submitted, which triggers MRSL Advisory Council evaluation of the substance for a later ZDHC MRSL update.

4.3. ZDHC Programme Management Team

- The ZDHC Programme Management Team is responsible for the (day to day) management, organisation and goal delivery of the ZDHC Input Focus Area.

With regards to the ZDHC MRSL Update Process, the main tasks include but are not limited to:

- Organising and processing the submitted proposals from Proposing Entities objectively and efficiently, for both the Technical Review Task Team evaluation and the MRSL Advisory Council review.
- First screening of submissions in order to:
    - Identify and exclude any submission with no relevance to apparel, textiles and footwear,
    - Identify duplicate submissions, and
    - Identify incomplete submissions.
- Objectively and efficiently evaluating the information on the submission document, commenting on, and adding any additional relevant information that will aid the MRSL Advisory Council in making a final decision.
- Proposing a recommendation to the MRSL Advisory Council as to which category

the chemical substance will go into (see section 3)

- Managing queries to the Proposing Entities if the Technical Review Task Team and MRSL Advisory Council have questions.
- Contributing (technical) expertise when appropriate to the review and evaluation process, for example, by checking data or discussing topics with third-party experts as needed.
- Providing advice when needed on the correct procedures and governance in accordance with this document, or any other relevant ZDHC documentation.
- Keeping ZDHC Contributors updated on the ZDHC MRSL Update Process.
- Reviewing the recommendations from the MRSL Advisory Council and resolving any questions.
- Implementing the final decision of the MRSL Advisory Council.
- Informing the Proposing Entities what the outcome of their submission is, which category the chemical has been put in, and the reasons for the decision.

5. Submission Criteria, Setting Limits and Defining Test Methods

5.1. Criteria and Information Requirements for Submitting Proposals

This section describes the criteria and required data and information to be submitted by the proposing entities and supported by the ZDHC and the Technical Review Task Team for updating the ZDHC MRSL.

To enable effective evaluation and prioritisation, we have taken elements from the ZDHC Prioritisation Framework[2] (Hazard, Volume, and Use Pattern criteria) that was used in the 2015 ZDHC MRSL update and strengthened it with some additional submission criteria. The aim of adding these criteria is to enable science-based evaluation, provide objective measures of feasibility and timing of restrictions, and generate critical information to efficiently support the decision-making process.

The "influence" criteria from that document are not part of the process anymore.

5.1.1. Identification of Proposing Entity

Basic identifying and contact information of the proposing entity should be provided in the submission. This is needed to be able to have communication in regards with the proposal.

2 **ZDHC Prioritisation Framework:** Focuses on ranking substances according to three established criteria in chemical hazard assessment: Hazard, Volume, and Use Pattern. Hazard-Volume-Use Pattern criteria are all basic pillars of chemical hazard and exposure ranking for priority

5.1.2. Identification of Proposed Substance

Proposing entity to submit at least of one the below data points in order to identify the substance:

- IUPAC name(s) of the proposed chemical substance
- Chemical Abstract Service number (CAS)
- European Inventory of Existing Chemical Substances (EINECS) number

5.1.3. Hazard[3]

As defined by ZDHC; 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)[4]; or equivalent concern), not just those that have been regulated or restricted in other regions.

Proposing entities should indicate the Globally Harmonized System[5] (GHS) classification of the substance. The GHS classification may be used in conjunction with the hazard ranking for the substance according to its Benchmark in the GreenScreen® List Translator (available

3 Hazard lists with specifics abound but the general definition of "hazard" is often omitted. As defined by US Code of Federal Regulations (OSHA): "Hazardous chemical means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas or hazard not otherwise classified." https://www.gpo.gov/fdsys/pkg/CFR-2016-title29-vol6/pdf/CFR-2016-title29-vol6-sec1910-1200.pdf

However US EPA has a very general definition encompassing the environment: "Hazard identification examines whether a stressor has the potential to cause harm to humans and/or ecological systems, and if so, under what circumstances." https://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&glossaryName=Risk%20Assessment%20Glossary

ZDHC has a detailed treatment of chemical hazard assessment in its draft document prepared with the Outdoor Industry Association Chemicals Management Working Group (March 2013)

4 defined by COMMISSION REGULATION (EU) 2018/605 of 19 April 2018

5 GHS classification is internationally accepted, replacing disparate chemical hazard classification systems across different jurisdictions. See http://www.unece.org/trans/danger/publi/ghs/ghs_rev06/06files_e.html

from the GreenScreen® website[6]). If the proposing entity has the GreenScreen® or similar type toxicology evaluation (e.g. SciVera Lens, Tox Services FMD) results these may be referenced in support of the submission.

ZDHC describes hazard ranking in the ZDHC Prioritisation Framework as follows:

- HIGH is GreenScreen® LT-1 (Benchmark 1)
- MEDIUM is GreenScreen® LT-P1 (Possible Benchmark 1)
- LOW is LT-U GreenScreen® (Unspecified [U] Benchmark)

Classifications such as these will help in prioritisation.

If there is no GHS classification, it must be indicated in the submission made by the proposing entity whether a) lack of data accounts for it or, b) in contrast, whether the data confirms no hazard for the human and environmental endpoints under review. Any substance proposed for restriction that is missing classification due to lack of data will not be rejected but may become a substance under Review- pending further information.

Under Hazard there is also the possibility to list any regulations that apply to the substance, this may relate to restrictions as chemical substance, product and/ or environment. If the substance is restricted by law for instance in the finished product this does not mean the substance will be automatically included in the MRSL.

5.1.4. Volume

For intentionally used chemical substances, the volume of a chemical substance in use in the textile, apparel and footwear supply chain is recognised as an indicator of its pervasiveness and the potential for exposure, which are critical to determine the relevancy in the industry and prioritisation. Information on this may lead to a conclusion that a substance is not a priority and therefore currently out of scope.

6 http://www.greenscreenchemicals.org/method/greenscreen-list-translator

Proposing entities should obtain data on the estimated annual tonnage of the proposed substance in the apparel, textile and footwear supply chain. These estimates by band or range must be submitted along with their sources to enable the MRSL Advisory Council to gauge high to low volume of the substance.

Proposed Substance for Restriction Annual Estimated Tonnage in Global Apparel, Textile and Footwear Supply Chain			
< 1 TON	1 – 10 TONS	>10 – 100 TONS	> 100 TONS

Availability of data: Volume data for hazardous chemicals in commercial use are generally available in the marketplace, though it can take dedicated work and effort to obtain. Various kinds of volume data for chemical substances, including specific industry use, can be purchased from market research and investment firms[7]. Note that the EU REACH Regulation makes volume a standard information requirement[8] for the Registration part of REACH. This may be relating to or including the textile, apparel and footwear industry but is not limited to the industry. For the purpose of prioritisation by the MRSL Advisory Council, estimated volume in tonnage bands is adequate. As more attention is paid to chemical volume in global assessment and restriction schemes, ZDHC anticipates that volume data will in time become more available and accessible. ZDHC's request to submit volume data in its ZDHC MRSL update process will be helpful in aggregating and refining this data to improve the value of the volume criterion over time.

5.1.5. Use Pattern

Use Pattern – like volume – is recognised as an indicator of a chemical's exposure potential. If a substance is used at multiple stages of the supply chain, it could be considered more pervasive and possibly a higher priority than substances confined to an early stage such as a chemical precursor or a fiber formation process.

7 For example: http://www.transparencymarketresearch.com/textile-chemicals-market.html

8 See https://echa.europa.eu/regulations/reach/registration/information-requirements

Proposing entities select Use Pattern information on the proposed substance, i.e. information on the chemical's known specific use(s) (Material) and stage(s) (Process) in the supply chain when employed. To facilitate obtaining comprehensive, consistent information, a checklist of Use Pattern cases is provided on the submission form.

The Use Pattern information for apparel, textile and footwear is utilised by the MRSL Advisory Council in the evaluation process to gauge HIGH, MEDIUM, or LOW ranking. ZDHC Prioritisation Framework defines Use Pattern rankings broadly as stated below. With more systematic information submitted on use cases as part of the MRSL update process, the categories can be further refined. Note use cases for the purpose of ZDHC's MRSL updates are those related to the apparel, textile and footwear industry.

- **HIGH**: intentional commercial and consumer use at one or more stages of production which may affect the workers, environment, community, or consumer. "Commercial" includes use of substance in the majority of stages of the apparel, textile and footwear manufacturing supply chain supplying goods for sale.
- **MEDIUM**: intentional industrial use (chemical industry/fiber formation). This is a narrower band of the apparel, textile and footwear supply chain than all commercial use above, meaning a substance is less pervasive.
- **LOW**: no intentional use (by-product, impurities, contaminants).

Unless unforeseen circumstances require any immediate inclusion without high use pattern such as a legislative update.

Proposing Entity has the opportunity to submit supporting document on usage and relevancy such as declaration by chemical formulators, and test data (e.g. chemical formulation MRSL testing/screening, product, wastewater). The Use Pattern will be used to review whether a substance is for instance a low priority and/or out of scope which may lead to the proposal being considered as out of scope.

The Proposing Entity needs to indicate all applicable use cases pattern based on raw materials and type of processes - see Scope section 3.5 to support the proposed substance.

5.1.6. Formulation Limit Value of Proposed Substance (Optional)

A proposing entity may also submit a proposed formulation limit value for the proposed substances. Substances will be evaluated for inclusion on the MRSL even if no limit is proposed.

Justification for the formulation limit value.

The proposed formulation limit value should be based on type and extent of use across the stages of processing. Reasonable calculations for formulation limit value in formulations can be made from knowledge of Use Pattern cases. Should the proposed limit value be the result of a legal requirement (with regards to environment and restrictions on chemical substance and or finished articles/products), the proposal must include a reference to the specific law.

Address impact of proposed ZDHC MRSL formulation limit value.

- Suggested formulation limit should support a intentionally use ban, but to be able to make a well-rounded decision the question does need to be asked if the formulation limit value will impact the functionality of chemical formulations.
- Would the limit value represent a step forward for global chemical manufacturing? Is this widely achievable in a time frame indicated by the proposing entity?
- Specify the uses likely to be impacted.

5.1.7. Testing Methodology (Optional)

When possible, the proposing entity is encouraged to cite an internationally-recognised test method or methods for analysis of the substances in chemical formulations, give the literature reference for any non-standard method or state if such a method does not exist.

Methods must be sufficiently sensitive for testing the concentration of the new substance in formulations. This means the detection limit should be at least 10 times lower than the proposed formulation limit value.

Substances will be evaluated for addition to the MRSL even if no testing method is proposed.

5.1.8. Safer Alternative(s) to Proposed Substance (Optional)

In order to restrict an existing substance in use in the textile and footwear industry, ZDHC encourages safer alternative(s) to be identified.

- The alternative(s) should have a lower hazard rating according to the GreenScreen → Benchmark rating, GHS classification or other similar hazard assessment scheme. This approach provides an effective means to reduce risk associated with a product or process if the potential for exposure remains the same or lower. This helps to prevent so called "regrettable substitutions".
- Alternative(s) must also be functional for the relevant use cases and commercially available.

Proposing entities are NOT required to propose alternatives but may wish to suggest some. Availability of a safer alternative is generally/often a requirement for inclusion on the MRSL so, whilst the absence of a safer alternative at submission stage does not preclude inclusion in the MRSL, it cannot be assumed that the alternatives will be actively sought as part of the review process. If a substance is not classified as high priority based on volume and use pattern a substance without a safer alternative may end up on the ZDHC Candidate List.

Note that a safer alternative may be a different kind of chemical formulation or process and not just a single chemical substitution.

5.2. Setting Limits in Formulations

The MRSL Advisory Council will work together, or with outside consultants as needed (facilitated by the ZDHC Programme), to determine or verify the appropriate limits in formulations that prevent intentional use of the substance.

5.3. Test Methods

Test methodology for chemicals in formulations on the ZDHC MRSL will be added or verified based on consultation with both the MRSL Advisory Council and the Laboratory Advisory Group.

6. Public Process for Submitting Proposals to ZDHC MRSL

6.1. Overview

The ZDHC website hosts the ZDHC MRSL Submission Platform for the public to submit their proposals. Individuals or groups (referred to as “proposing entities”) may propose:

a) New substance additions, including a proposed limit value.

b) New limit value for existing substances on the ZDHC MRSL. (Excluded for the pilot)

Submissions may come from a number of sources, including but not limited to:

- Proposals from brands,
- Proposals from NGOs,
- Proposals from other stakeholders,
- Legislative 'radar',
- The ZDHC Foundation, task teams and its Contributors
- Confirmed legislation (with regards to environment and restrictions on chemical substance and or finished articles/products).

Proposals must be submitted and accompanied by required data and information to enable evaluation and prioritisation for the update to the ZDHC MRSL. The requested information is specified and based on what is needed to evaluate the proposal according to submission criteria as outlined in Section 5.

6.2. ZDHC MRSL Submission Platform

ZDHC hosts the ZDHC MRSL Submission Platform to receive public proposals and supporting information (including the functionality to attach documents) for updating the ZDHC MRSL. The platform is also developed to allow review process by the ZDHC Programme Team, the Technical Review Task Team (part of ZDHC Input Focus Area) and the MRSL Advisory Council (MAC).

6.3. Routine Track Additions Process

Chemical substances which are **not legally restricted** (from the perspective of regulations on restrictions on chemical substance or formulations) at the time of submission and are not believed to be subject to a restriction within 12 months are expected to follow the routine submission track.

If the required data and information to evaluate the proposal is submitted, a decision is will be made after the process for the ZDHC MRSL review is completed.

6.4. Fast Track Additions Process

Chemical substances that will be **soon legally restricted in formulations and/or on substance level** which are relevant to scope described in section 3.1 are expected to follow the fast track process.

This process is meant for chemical substances that will soon be legally restricted, i.e. within 12 months. The default option will be to place the substance on the ZDHC MRSL and may need further research to define limit value on chemical formulation level.

As soon as a chemical substance has an effective date of being restricted in formulations and/or as a substance the fast track process can be initiated by the ZDHC Programme. This may include an immediate push through the MRSL Submission Platform for voting.

7. Evaluation of Submitted Proposals and Decision-Making Process

The submitted proposals and supporting information may prompt questions by the MRSL Advisory Council.

In all cases where sufficiency and accuracy are questionable or lacking, the MRSL Advisory Council may request the ZDHC Programme to consult third-party consultants or the ZDHC Input Focus Area to pursue questions with the proposing entity or other qualified parties for clarification of the facts and augmentation of received information. The ZDHC Programme assists by relaying questions back to the proposing entities when requested by the MRSL Advisory Council.

It can also consult its own sources and references. Alternately, it may decide not to pursue these avenues if in its expert judgment the probability of gaining better information is too low.

7.1. Evaluating Submitted Proposal Based on the Submission Criteria

For **Hazard, Volume**, and **Use Pattern**, the MRSL Advisory Council:

- Verifies the GHS Classification and related submitted information such as the GreenScreen → Benchmark Hazard ranking, altering if required.
- Assesses the submitted tonnage figures for Volume of the proposed substance in the apparel and footwear supply chain and determines volume ranking.
- Reviews for applicability the Use Pattern cases selected by the proposing entity and may revise the selection based on its expert knowledge.

For the **rest of the submission criteria**, the MRSL Advisory Council:

- Evaluates the justification for the proposed formulation limit value in light of the use case and stage-of-processing information.
- May perform its own calculations to test the credibility of the proposed limit value.

- Considers the impact on functionality of the substance in manufacturing with the proposed limit value.
- Performs the same assessment when a new limit value is proposed for an existing substance on the ZDHC MRSL.
- Verifies the acceptability of the cited test method.
- For Safer Alternatives the MRSL Advisory Council should ensure that the proposed alternative meets the safer criteria listed in section 5 to avoid regrettable replacements.

In case certain information is absent, the MRSL Advisory Council (MAC) may provide supporting information to support in decision making.

7.2. MRSL Advisory Council Final Decision to ZDHC

The data and information provided by proposing entities provides evidence for prioritising updates to the ZDHC MRSL and ZDHC Candidate List and is utilised by the MRSL Advisory Council to conduct fact-based evaluation and make final decision. In case of ambiguous data and/or information the judgement of the MRSL Advisory Council is based on their experience and knowledge.

When a substance with hazardous endpoints is evaluated for phase-out and substitution, the Precautionary Principle[9] (defined by EU legislation) is followed and applied as a guidance to both. This avoids the pitfall of so called "regrettable substitutions" that may be worse than the substance targeted for replacement.

The MRSL Advisory Council applies its technical competencies and understanding of manufacturing or other relevant knowledge to reach a conclusion, and decide which list the substance properly applies to and make one of the following recommendations:

1. Accept or reject new substance additions to the next update of **ZDHC MRSL or in case of a Fast Track immediate inclusion**.

9 As enshrined in European law, the Precautionary Principle holds that if a policy or action might cause harm to the public, in the absence of scientific consensus, the policy or action should not be pursued. Once there is more scientific information, the situation should be reviewed. http://eur-lex.europa.eu/summary/glossary/precautionary_principle.html

2. Accept, reject or adjust new formulation limit value for substances previously listed on the **ZDHC MRSL**.

3. Place the substance on the **ZDHC Candidate List** if the substance is prioritised on other criteria but lacks viable safer alternative chemicals or processes that are:
   - commercially available,
   - technically and economically feasible.

   At its discretion, high priority substances without recognised test method or limit value may also be placed on the ZDHC Candidate List.

   The MRSL Advisory Council should recommend time-scaled inclusion or review to the ZDHC MRSL. For example, "substance X will be added in the ZDHC MRSL in 2025".

4. Keep substance as a **substance under review- pending further information** if submission information is inadequate to reach a decision.

5. Identify as **Substance out of Scope** if the chemical substance is considered not to be hazardous according to the ZDHC definition, or the substance is not used in the textile, apparel and footwear industry, or not to be an immediate priority

The MRSL Advisory Council's ability to reach both timely and fact-based decisions is significantly aided by not having to research all the necessary data and information on its own. Instead it can apply its expertise to determining sufficiency of data and information, whether and how to fill any gaps, and reaching conclusions supported by the available evidence.

7.3. Conclusions and Report

The MRSL Advisory Council should develop and submit via the ZDHC MRSL Submission Tool to ZDHC a formal written report which includes its final decisions for each update proposal submitted to ZDHC for the MRSL update.

The report includes a summary of reasons for the decision under the defined submission criteria. Where consensus on a decision is lacking, the reasons are summarised with both

the majority and minority opinions provided. The majority's recommendation will become the MRSL Advisory Council's official position, unless its members had agreed that the disagreement is significant enough to keep the substances as a substance under review-pending further information, or on the ZDHC Candidate List if the issue is about safer alternatives.

7.4. Reviewing and Acting on MRSL Advisory Council Decision

Revision:

- After the MRSL Advisory Council reports its final conclusions and decisions in writing, the ZDHC Programme reviews the feedback.
- The ZDHC Programme may request the MRSL Advisory Council to respond to any questions or concerns relating to their conclusions and decisions. As appropriate, the MRSL Advisory Council may amend its report in response to the ZDHC Programme enquiries.
- The ZDHC Programme is responsible for implementing the final decision of the MRSL Advisory Council such as communicating the decision to the PE and maintaining the ZDHC MRSL and ZDHC Candidate List.

8. Connections to other ZDHC Programme and Tools

8.1. ZDHC MRSL Conformance Guidance

The ZDHC MRSL is a list of chemical substances banned from intentional use in wet processing facilities in the apparel, textile and footwear supply chain (please refer to the scope defined in section 3.1). By using chemical formulations that conform to the ZDHC MRSL, suppliers (wet processing facilities) can assure themselves, and their customers, that restricted chemical substances are not intentionally used during the production processes.

Conformance with the ZDHC MRSL is an important part of a holistic chemicals management approach that will help to drive sustainable chemistry and the reduction of hazardous chemical discharge into the environment. The ZDHC MRSL Conformance Guidance is intended for use by chemical suppliers, brands, material suppliers, product finishers, and certification bodies. The ZDHC MRSL Conformance Guidance provides chemical suppliers with an indication system to assess the extent to which a chemical formulation conforms to, or meets, the requirements of the ZDHC MRSL.

ZDHC's intent is to leverage third-party certification systems that meet the ZDHC acceptance requirements to create an indication of conformance. An integral part of the indication system takes the form of certificates from ZDHC accepted third-parties or acceptable analytical test results. The ZDHC MRSL Conformance Guidance describes the criteria that certification systems must meet in order to be accepted by ZDHC as an indicator of MRSL conformance.

The ZDHC Programme will not provide legal accreditation to certification bodies, neither will it provide certification or testing services for chemical formulations to determine their conformance to the ZDHC MRSL.

8.2. ZDHC Gateway - Chemical Module

The ZDHC Gateway - Chemical Module is an online platform and database that enables chemical formulators to securely register and share information with brands and suppliers (wet processing facilities) on safer alternative chemical formulations that are checked against the ZDHC MRSL Conformance Guidance.

The chemical information registered in the Gateway by the formulators includes the conformance level to the ZDHC MRSL and it specifies which version of the ZDHC MRSL the formulation is conformant to. ZDHC verifies the conformance level information with the respective third-party certification organisations.

Whenever ZDHC releases a new version of its MRSL, the existing certified chemical formulations registered in the Gateway platform will receive a grace period to achieve conformance to the latest version of ZDHC MRSL.

8.3. Relationship of the ZDHC Candidate List and the ZDHC Gateway - Chemical Module

There will be a dedicated section in the ZDHC Gateway - Chemical Module where industry and academia can showcase safer alternative chemical formulations or processes for substances on the ZDHC Candidate List.

For alternatives to chemical substances listed on the ZDHC Candidate List, it will be the duty of the brands and their supply chain partners to conduct due diligence on the information provided there, including the hazard assessment rating, risk evaluation and the performance of the alternative for their product.

ZDHC will not house chemical hazard data on the special section. Brands and their supply chain partners will evaluate hazard assessment information as needed on their own with the chemical formulator. A part of this review should include the effect on water and energy impacts using the alternative.

ZDHC Gateway – Chemical Module	
Section 1:	Section 2:
Chemical formulations that are ZDHC MRSL conformant.	Safer alternative chemicals or processes for substances on the ZDHC Candidate List.
Launch in June 2017.	Scheduled for 2019.

9. Update of the Principles and Procedures Document

This Principles and Procedures Document will be reviewed annually and updated annually or more frequent. All revisions will be open for comment by the MRSL Advisory Council, all ZDHC Contributors as well as any other relevant stakeholders. The ZDHC Programme Management Team is responsible for revisions and updates, while taking into consideration the comments from the above-mentioned stakeholders.

The ZDHC MRSL will be reviewed annually and updated when needed, as well as the ZDHC Candidate List, Substances under Review - pending further information and Substances considered to be out of Scope. This review may or may not include updates on the scope (described on section 3.1) to the substances included or formulation limit value.

APPENDIX A
Glossary

The list below identifies the key definitions, abbreviations and acronyms that appear in this Principles and Procedures Document.

Chemical Distributor: Refers to a person or business entity in the chemical industry who works as an intermediary between seller and buyer of chemicals by providing select services e.g. trading/reselling/warehousing/promoting the seller's chemicals and formulations.

Chemical Formulation: A chemical formulation is a mixture of chemical substances blended together to be used by the manufacturing facility. A chemical formulation is the finished chemical product, ready for use.

Chemical Formulators: Refers to a person or business entity in the chemical industry that are the original manufacturer of the chemical formulations.

Chemical Substance: A chemical substance is a chemical element and its compounds in the natural state or obtained by any manufacturing process. A chemical substance is usually identifiable by a single, unique Chemical Abstracts Service (CAS) number or Color Index (CI) number.

Supplier: Refers to a person or business entity that supplies goods or services usually under a written agreed contract agreed between the two parties.

Formulation Limit Value or Limit Value: This is the limit value set for the intentional use of banned substances' presence as traces in chemical formulations.

ZDHC MRSL: The ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) is a list of chemicals, restricted from intentional use by manufacturers for textile, apparel and footwear.

ZDHC Candidate List: includes high priority chemical substances lacking viable safer alternative chemicals or processes.

Substances under Review- pending further information: A submission that does not provide the critical required minimum data and information for the MAC to make a decision.

Substances considered to be out of scope: A Substance that after review on hazard, use pattern and intentional use in formulations has been considered by a group on industry-experts to be out of the scope of the ZDHC MRSL.

ZDHC Gateway: The ZDHC Gateway consists of two Modules – the Chemical and the Wastewater Module.

The ZDHC Gateway – Chemical Module, is the first ZDHC data exchange platform that enables chemical formulators to securely share chemical information with brands and textile, footwear, and leather suppliers in-line with the ZDHC standards.

The ZDHC Gateway – Wastewater Module is based on the ZDHC Wastewater Guidelines and is a new global standard for water stewardship that goes beyond regulatory compliance for the textile, leather and footwear industry.

Science-Based Decision: Whenever we refer to science-based decisions this refers to a decision made based on the submission criteria listed in the document.

APPENDIX B
Scope-Materials

(these are the most common but the process is not limited to these materials)

Coated Fabric (Artificial/Synthetic Leather)	PU-based Coated Fabric/Synthetic Leather
	PVC-based Coated Fabric/Synthetic Leather
Feathers and Down	Duck down
	Duck feathers
	Goose (grey/ white) feathers
	Goose (grey/white) down
	Peacock feathers
Fur	Fox
	Haircalf
	Mink
	Rabbit
	Raccoon
	Sheep Shearling
Leather	Buffalo Hide
	Calf Skin
	Camel Hide
	Cattle Hide
	Cow Hide
	Deer Skin
	Exotics - e.g. crocodile, python, stingray, etc.
	Goat Skin
	Kangaroo Skin
	Pig Skin
	Sheep Skin
Natural Fibres ***Animal Origin***	Cashmere
	Merino
	Silk
	Wool

Natural Fibres ***Vegetable Origin***	Bast Fibre
	Cotton
	Flax
	Hemp
	Jute
Rubber, Elastomer, Foam, Thermoplastic	Ethylene-Vinyl Acetate (EVA)
	Foams
	Polyester Wadding
	Polyethylene (PE)
	Polyurethane (PU)
	Rubber - Natural
	Rubber - Synthetic
Synthetic Fibres	Acrylic (PAC)
	Aramid Fibre
	Carbon fibre
	Elastane (Spandex)
	Glass fibre
	Polyacetic acid fibre (PLA)
	Polyamide (PA)
	Polyester (PE)
	Polypropylene (PP)

APPENDIX C
Scope-Processes

Apparel Assembly - (including Cut, Make & Trim (CMT), stitching/sewing facility, gluing, bonding, flat knit (incl. linking))
Shoes Assembly
Embroidery (including panel, garment and fabric)
Beamhouse & Tanning
Wet End (Fatliquoring, Retanning and Dyeing)

Dyeing	Fibre Dye
	Garment Dye
	Piece Dye
	Space Dye
	Tied Dye
	Top Dye
	Yarn Dye
Fibres / Raw Materials Processing	Down Processing (cleaning)
	Feather Processing (cleaning)
	Scouring
Finishing	Coating
	Emboss and deboss
	Laminating
	Material specialty finishes (e.g. stain repellency, water repellency, plisse effect, etc.)
	Wet processing/finishing (including washing, laundry, garment dye)
Material Creation	Knitting (such as circular knit to create fabric)
	Metal Casting
	Moulding (Trims, rubber or EVA moulding etc)
	Non-woven
	Raw Hide
	Weaving
	Yarn spinning

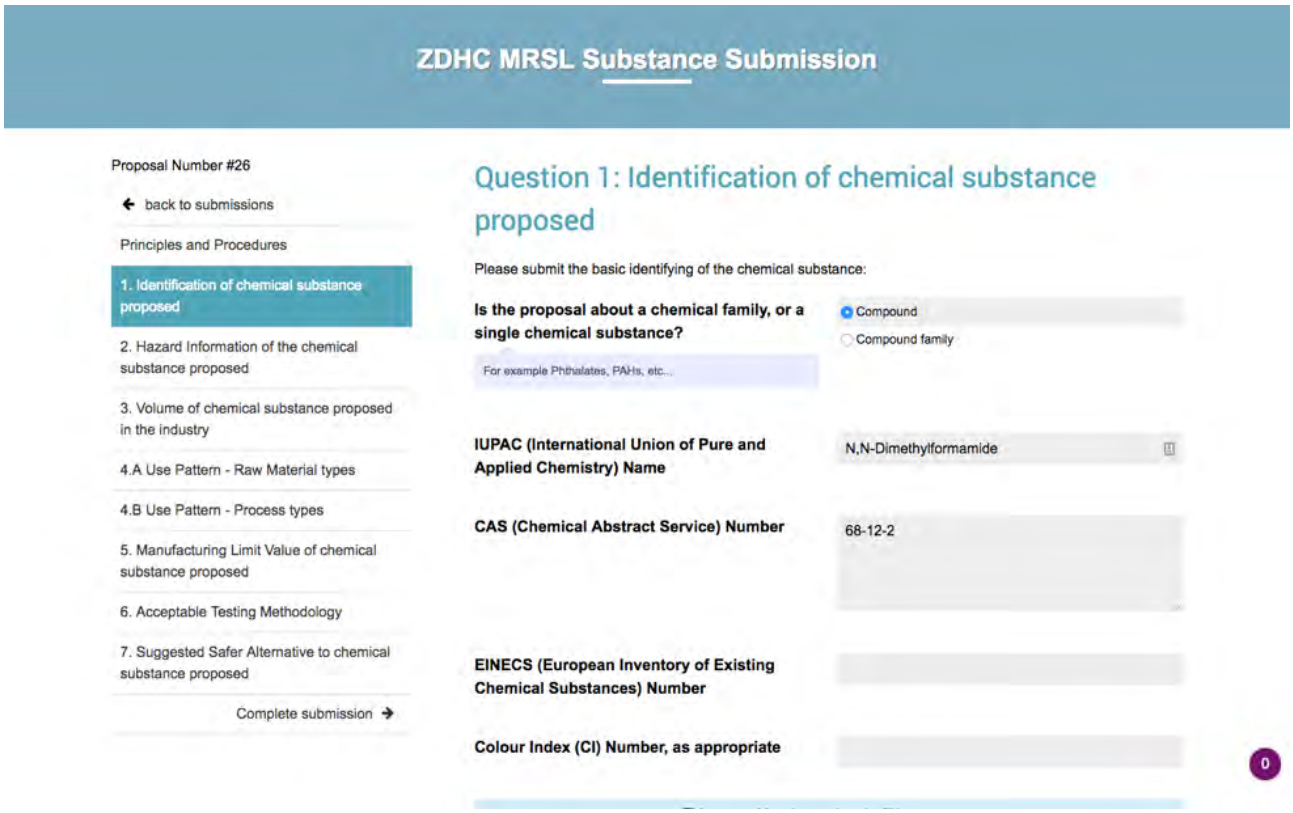
Printing	Burn Out
	Digital Print
	Fabric Print
	High Density Print
	Placement Print
	Puff Print
	Screen Print
	Sublimation

APPENDIX D
ZDHC Online Submission Requirements for Proposals

SUBMISSION INFORMATION (summary)	Minimum Critical for Fast Track Decision
Identification of Proposing Entity	
▪ Contact information	▪ Critical
Identification of Proposed Substance	
▪ IUPAC Name (EINECS/CI if applicable)	▪ Critical
▪ CAS number	▪ Critical
▪ EINECS number	▪ Critical
▪ Colour Index (C.I.) number is applicable	▪ Critical
Hazard Ranking of Substance	
▪ GHS Classification	▪ Critical
▪ Benchmark® in GreenScreen List Translator	▪ Critical
▪ High, Medium, Low ranking (or no data) according to Benchmark	▪ Critical
Volume of Substance in Industry	
▪ Total tonnage in use in apparel and footwear industry	▪ Critical
Use Pattern in Industry	
▪ Select all applicable Use Case and Processing Stage choices	▪ Critical
Formulation Limit Value of Proposed Substance (Optional)	
▪ Justification	▪ Non-Critical
▪ Determinations and calculations based on Use Cases and Processing Stage	▪ Non-Critical
▪ Impact on functionality	▪ Non-Critical
▪ Does it drive the industry towards best practice?	▪ Non-Critical

Acceptable Testing Methodology (Optional) ▪ Cite approved test method(s) of appropriate sensitivity	▪ Non-Critical
Safer Alternative to Proposed Substance (Optional)	
▪ Optional for submitting entity	▪ Non-Critical
▪ GHS Classification or GreenScreen Score	▪ Non-Critical

APPENDIX E
ZDHC MRSL Submission Platform-



APPENDIX F
Decision Making Guidelines for MRSL Advisory Council (MAC)

DECISION MAKING

- In common with decision making in the ZDHC Programme and in the spirit of collaboration, MAC will strive for alignment on all decisions they are requested and/or need to make. This principle requires MAC to 'discuss then decide' rather than waiting for agreement on every detail.
- If alignment cannot be reached, decisions can be adopted following voting as the group itself determines is appropriate – see Section on 'Voting' below.
- It is recommended for MAC to consider the recommended meeting quorum and voting processes described below for guidance on best practices with regard to quorum and voting.

QUORUM

- A majority of MAC Members present in person (over two-thirds), by teleconference or other communication equipment by which all members participating can hear each other will constitute a quorum.
- The affirmative vote of a two-thirds (66.6%) majority of the MAC Members present (assuming quorum) shall be necessary for the adoption of any MAC decision.

VOTING

In the event that a voting process is needed to make a decision the following applies

- Each MAC Stakeholder Group is entitled to one (1) vote. Identified Stakeholder Groups are; Governmental Organisations, Non-Governmental Organisations, Service Providers, Chemical Industry and Manufacturers. We may identify additional groups during the process.
- Voting by the MAC shall occur in a properly noticed meeting of the group and communication by which all persons participating in the meeting are able to hear one another, and such participation shall constitute presence in person at the meeting.
- Votes during an official meeting may be registered by voice, hand or ballot delivered in person or electronically.

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