# The Zero Discharge of Hazardous Chemicals Programme's Manufacturing Restricted Substances List (MRSL) Conformance Guidance

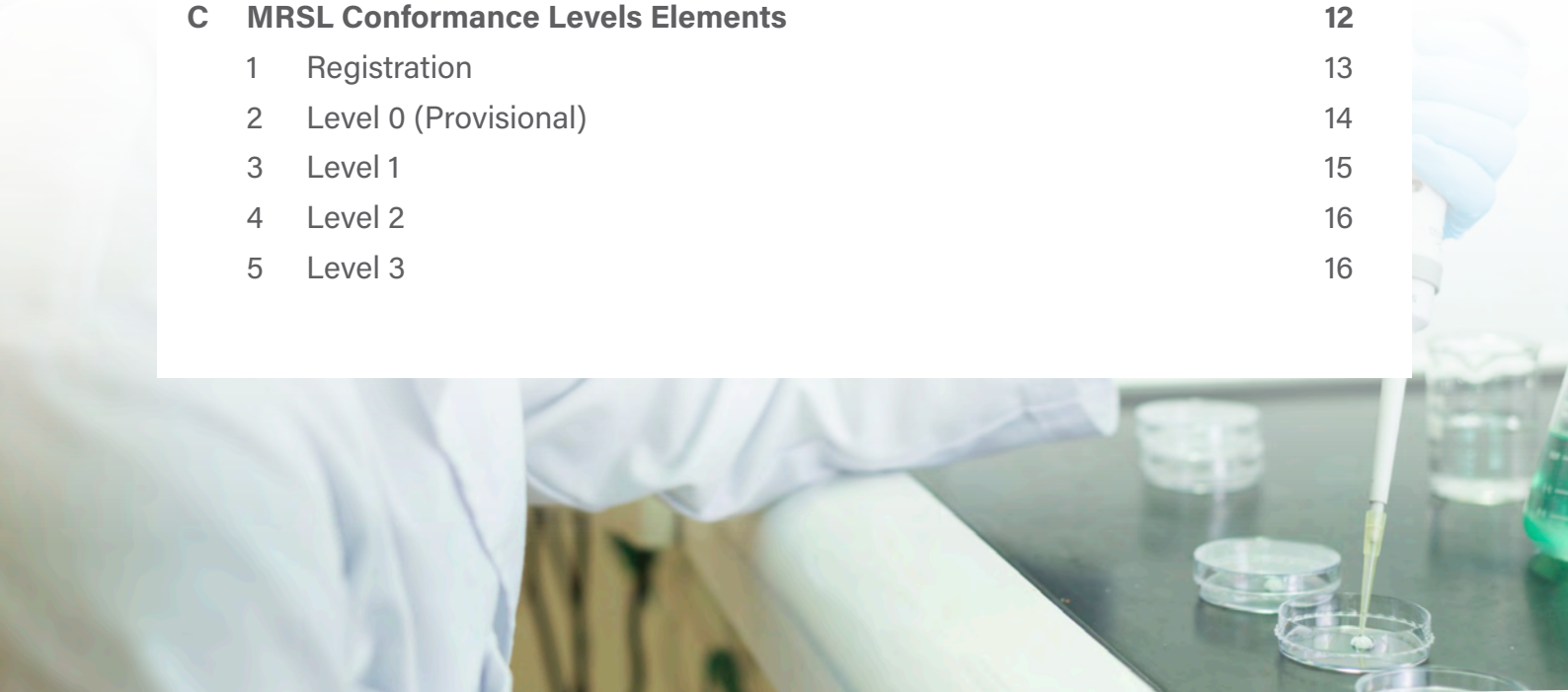
ZDHC

The Roadmap to Zero Programme

*Guidance for Demonstrating Chemical Formulation Conformance to the ZDHC MRSL*

# Contents





# A. Introduction

Using chemicals of known quality that meet the requirement of the ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) is an important part of chemical management that will lead to zero discharge of hazardous chemicals.

This document describes the way in which chemical suppliers can provide indicators of conformance to become ZDHC accepted for MRSL conformance. Chemical suppliers, brands, material suppliers, product finishers, and certification bodies intend it for use.

The ZDHC Programme will not provide legal accreditation to certification bodies or provide certification or testing services for chemical formulations to determine their conformance to the ZDHC MRSL.

The intention of the ZDHC MRSL Conformance Guidance is to assist brands and their value chains find recognised, credible processes which provide an indication that a chemical formulation is in conformance with the ZDHC MRSL.

## 1. The ZDHC MSRL

The ZDHC MRSL is a list of chemical substances banned from intentional use in facilities that process textile materials, synthetic leather, leather, and trim parts in textiles and footwear. This includes not only chemicals used specifically for production, but also cleaning supplies, machine cleaners, lubricants, etc. that are in use in the facility for maintenance and support.

This is different from a Restricted Substances List (RSL), which sets limits on chemical substance concentrations in the final product. The ZDHC MRSL sets restrictions on trace concentrations for banned chemical substances that are not intentionally used, but may be found as unintended contaminants within a commercial chemical formulation.

The ZDHC MRSL is a living document and will be updated as needed to expand the materials and processes covered, and to add substances that should be phased out of the value chain. The ZDHC MRSL can be downloaded at www.roadmaptozero.com

## 2. ZDHC MRSL Conformance

The ZDHC MRSL provides brands and their value chains with a harmonised approach to managing chemical formulations used during the processing of raw materials and garment finishing within the textile, leather and footwear value chain.

This document will assist interested parties assess whether chemical formulations are likely to conform to the ZDHC MRSL. By using chemical formulations that are in conformance to ZDHC MRSL limits, material suppliers can assure themselves, and their customers, that banned chemical substances are not intentionally used during production.

### 2.a Demonstrating Conformance to the ZDHC MRSL

There are many possible ways to assess conformance to the ZDHC MRSL. The ZDHC Programme chooses to do this by relying on third-parties who provide certification systems, based on input stream management concept and product evaluation, that are recognised and accepted by the ZDHC Programme as credible.

The ZDHC Programme will review the methods and business practices of third-party certification bodies that apply to the ZDHC Programme for ZDHC MRSL conformance acceptance. Those that meet the requirements outlined in Section D of this document, will be accepted as providing an indication of ZDHC MRSL conformance.

Chemical formulations with certifications from these suppliers are termed ZDHC MRSL conforming and will be listed in the ZDHC Gateway - Chemical Module[1]. While some of the certification systems may go beyond checking for ZDHC MRSL conformance, the ZDHC MRSL conformance process only refers to whether the chemical formulation meets the requirements of the ZDHC MRSL.

Not all chemical suppliers currently work with a third-party certification body. To account for this, the ZDHC MRSL conformance process includes a process to assist chemical suppliers on their journey to demonstrating conformance through third–party certification. They can register their company and the safety data sheet (SDS) for the product with the ZDHC Programme in the ZDHC Gateway - Chemical Module.

1Currently in development

### 2.b ZDHC MRSL Conformance Levels

Certification systems differ in their approach and depth of their reviews of chemical formulations. In general, the less that is known about the chemical formulation and the chemical supplier, the less confidence there is that the chemical formulation will consistently meet the ZDHC MRSL criteria.

Material suppliers and brands may have their own preference as to which ZDHC MRSL conformance level best fits their business practice and the risk of ZDHC MRSL failure they are willing to tolerate.

The ZDHC MRSL conformance process offers brands, material suppliers, and product finishers a choice of recognised and accepted options to provide ZDHC certificates. In recognition of the different approaches and risks related to depth of review, there are four levels of ZDHC MRSL conformance indicators.

The higher the conformance level, the more confidence there is that the chemical formulation will consistently meet and conform to the ZDHC MRSL. The ZDHC MRSL conformance indicator levels are:

- Registered (Chemical company, formulation name, and safety data sheet)
- Self-declaration (Level 0)
- Conforming (Level 1-3)

Note: There is no conformance to the ZDHC MRSL assured by a formulation that is only registered with ZDHC Gateway - Chemical Module.

## 3. Using this Guidance

This guidance document specifies the required elements of each conformance indicator level and the requirements for ZDHC accepted third-party certification bodies. In this document, brands and their suppliers can find the requirements for demonstrating ZDHC MRSL conformance, and third-party certifiers can find the requirements for ZDHC acceptance.

## 4. Roles and Responsibilities

### 4.a The ZDHC Management Team

The role of the ZDHC Management Team, or its designee, is to select and accept independent third-party certification bodies that review chemical formulations and, as part of that certification, provide assurance that the formulation is likely to conform to the ZDHC MRSL. The ZDHC Programme is providing a system to help brands and their value chain find recognised, credible third-parties that provide indicators (in the form of certifications) that

a chemical formulation will be in conformance to the ZDHC MRSL requirements.

The ZDHC Programme will not review or certify chemical formulations to determine their conformance to the ZDHC MRSL. That is the role of the third-party certification bodies.

The ZDHC Programme is not granting legal accreditation upon third-party certification bodies or telling them what and how they should examine chemical formulations. The decisions regarding how certifications are awarded is the responsibility of the certifiers.

#### 4.b Brands, Material Suppliers, and Product Finishers

The role of brands, material suppliers, and product finishers is to ask chemical suppliers for chemical formulations that conform to the ZDHC MRSL and have a self-declaration, test report or accepted third-party certification verifying conformance. They are also expected to use the Chemical Module of the ZDHC Gateway as a sourcing tool for ZDHC MRSL conforming formulations.

#### 4.c Certification Bodies

The role of certification bodies is to independently maintain the certification system for review of chemical formulations and, if desired, supply the needed information about the certification system to the ZDHC Programme to determine their acceptability to assess ZDHC MRSL conformance in accordance with the conformance indication levels specified above.

The certifier is expected to have a system in place to investigate feedback from stakeholders about certified formulations reported to have not met the criteria for which they are certified. Certification bodies should meet the requirements as specified in Section D of this document and make their methods and validation data available to chemical suppliers, brands, material suppliers and product finishers upon request. Conformance level determinations should be fully transparent in their methodology.

#### 4.d Chemical Suppliers

Chemical suppliers will independently decide whether to register their formulations with the ZDHC Gateway - Chemical Module and which third-party certifications (if any) they will maintain for their products.

## 5. Using this Conformance and Looking for Information

#### 5.a Brands, Material Suppliers, and Product Finishers

Dyeing and finishing mills, synthetic leather

producers, laundries, printers, tanneries, footwear assembly facilities or anywhere that chemical formulations are used for the production of textile, leather and footwear, can use this guidance to decide what type of certification they might ask for as indicators of conformance the ZDHC MRSL.

This guidance can also be used by brands that want to help their value chain find ZDHC accepted certifiers of ZDHC MRSL conformance. See Section C in this document for the differences between conformance indicator Levels 1-3 and Annex A for testing guidance for Level 1.

### 5.b Certification Bodies

Certification bodies will use this guidance to understand what information is required to be reviewed by the ZDHC Programme to be listed as an accepted certification body. See Sections C and D of this document to review the requirements for a certification system to become accepted.

### 5.c Chemical Suppliers

Chemical suppliers can use this guidance to understand what the requirements are, and the differences between the ZDHC MRSL conformance indicator levels. See Section C of this document to review the differences between the information expected to be exchanged with the certification body for Levels 1-3 and Annex A for testing guidance for Level 0.

## 6. Primary Responsibility for Conformance

The primary responsibility for assuring conformance with any legal requirements lies with the organisation that places the chemical formulation on the market. Regardless of the independent certifications of conformance or listing as ZDHC MRSL conforming, the chemical supplier has a contractual and legal duty to ensure that the product will perform its declared function, and not endanger the health or safety of the end user if used according to the risk management measures mentioned in the safety data sheet and according to the chemical suppliers´ application recommendations.

## 7. Frequency of Updates to Conformance Information

In the case that a chemical formulation changes, chemical suppliers must update their certifications. The length of validity for the certification depends on the certification system used. The ZDHC Programme encourages certifying bodies to indicate which ZDHC MRSL version the certificate is valid for. It is expected that no chemical formulation will be more than one version behind the latest version in certification.

# B. ZDHC MRSL Conformance Process

## 1. What is MRSL Conformance?

ZDHC MRSL conformance means that the chemical formulation does not contain any of the chemical substances on the ZDHC MRSL above the ZDHC MRSL threshold commercial formulation limit values.

Registration of the chemical company and their products with the ZDHC Gateway - Chemical Module is the initial step in the process to gain visibility about the chemicals in use throughout the industry. Beyond registration, independent, third-party evaluation of the claims by the chemical company regarding ZDHC MRSL conformance give confidence and an indication that the chemical formulation meets the requirements of the ZDHC MRSL.

Recognising that not all certifying systems are equivalent, the conformance indicator Levels 0-3 give a confidence rating that this requirement would be met. The higher the level, the more confidence there is that the chemical formulation will meet the ZDHC MRSL requirements. This is because more information is known about the chemical formulation and the chemical supplier.

## 2. Conformance Process Levels

As specified above the ZDHC MRSL conformance Levels are 0, 1, 2, and 3. The higher the level number, the more rigorously the chemical formulation and chemical supplier practice have been reviewed. This is illustrated in Figure 1 below. Higher conformance indicator levels are expected to result in a lower probability of any ZDHC MRSL chemical substances being present i.e. higher confidence in that product and the chemical supplier.

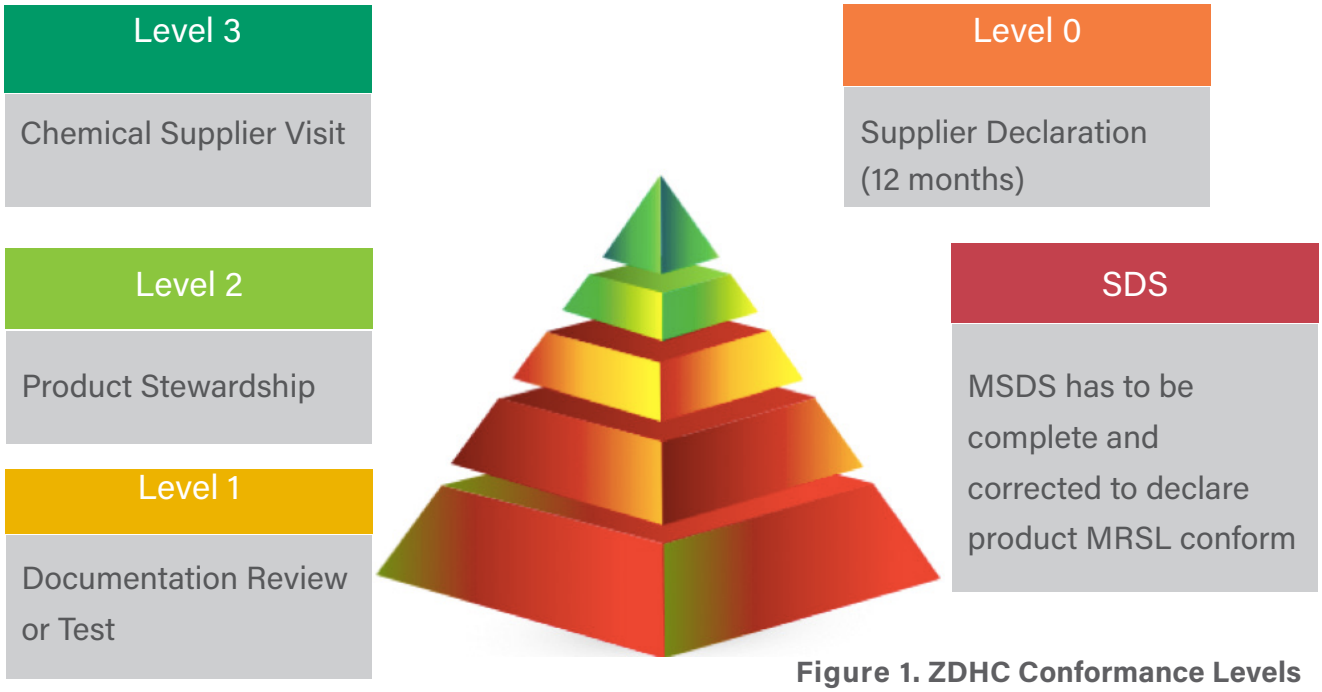



**Figure 1. ZDHC Conformance Levels**

Note that level 0 is defined as Provisional and ZDHC MRSL Conforming is classed as Level 1, 2, and 3.

Provisional and MRSL Conforming registrations are valid for the following lengths of time:

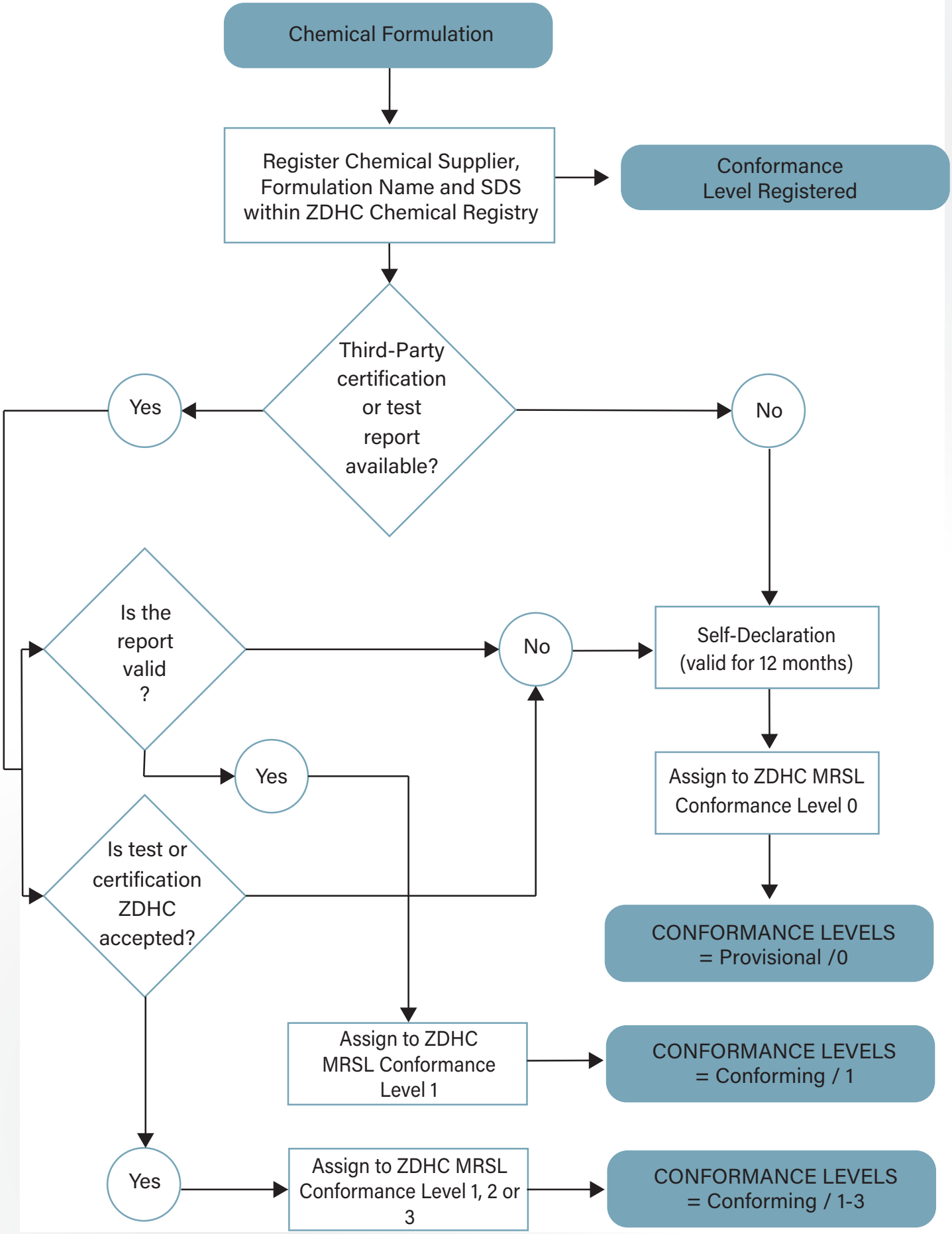
- Provisional (Supplier Declaration), 12 months after which it must be renewed at a higher level
- Level 1 conformance established based on an analytical test only is valid for 24 months after the test report must be re newed
- All other conformance certifications are valid until the expiration date of the certificate

Conformance to the ZDHC MRSL at any level means that the formulation also meets the conformance requirements of the lower Levels. This means that there is no need to obtain certifications for the lower conformance Levels.

In Figure 2, Pathway to ZDHC MRSL Conformance for Chemical Formulations, an example of a chemical formulation evaluation process is illustrated. First, the formulation of interest is selected. Then, if the product has an existing, accepted third-party certification, the registration will be completed automatically by exchange of data with the certifier to validate the claimed level of certification.

If there is no third-party certification, the chemical supplier has the option to register with the ZDHC Gateway - Chemical Module. (In the context here, third-party refers to an independent body – i.e. not the chemical supplier or brand themselves).

**Figure 2. Pathway to ZDHC MRSL Conformance for Chemical Formulations**



# C. ZDHC MRSL Conformance Level Elements

Chemical suppliers can demonstrate conformance of a chemical formulation to the requirements of the ZDHC MRSL by third-parties analytical test or obtaining certification that the formulation meets one of the levels below. (Note: Level 0, self-declaration, is the only level that does not require an independent review of the information by a third-party).

Certification bodies can be evaluated for ZDHC acceptance by providing information supporting appropriate business and management practices, and a description of how their certificate verifies the requirements of one or more conformance levels. This is described in Section D of this document.

It is recognised that these systems are better developed for textiles than leather and trims, however by publishing this guidance the ZDHC Programme is sending a signal to certifiers that there is a gap in this sector and hopes to encourage the development of those systems.

In Table 1 the required elements for each of the MRSL conformance levels are illustrated. The conformance levels are independent of each other.

This means that a chemical formulation does not need to first have a certificate at Level 1 to attain a certificate at Level 2.

In the future ZDHC plans to develop a conformance level beyond Level 3. This Level "3+" would include a full review of a formulation (in a confidential business-to-business manner with the certificate provider) and would be intended to encourage continuous improvement and innovation towards safer chemistry and development of such systems. Currently no certification system performs a full recipe formulation and a full Product Stewardship review that includes a site visit as part of their review process.

**Table 1. Requirements for Registration and MRSL Conformance Levels**

<table>
<tr><th>MRSL Conformance Level</th><th>Register Chemical Supplier with ZDHC Gateway - Chemical Module</th><th>Register Formulation Name and SDS with ZDHC Gateway - Chemical Module</th><th>Self-declaration of MRSL Conformity</th><th>Test report meeting ZDHC Quality Criteria (Annex A)</th><th>Third-party review of documentation against MRSL</th><th>Chemical Supplier Product Stewardship Review</th><th>Chemical Supplier Site Visit</th></tr>
<tr><td>Registered</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td colspan="2" rowspan="3">Automatic when formulation certified by ZDHC accepted body</td><td rowspan="3">As required by certification body</td><td colspan="2">Test report OR third-party review of documentation</td><td></td><td></td></tr>
<tr><td>2</td><td rowspan="2">As required by certification body</td><td>X</td><td>X</td><td></td></tr>
<tr><td>3</td><td>X</td><td>X</td><td>X</td></tr>
</table>

## 1. Registration

Registration means that the chemical company has registered its company information with the ZDHC Gateway - Chemical Module and uploaded a copy of the chemical formulation SDS to the Chemical Module of the ZDHC Gateway database.

There is no MRSL conformance expected or implied by registration of the chemical company and SDS with ZDHC.

Registration requirements are as follows:

- The chemical supplier registers with the ZDHC Gateway - Chemical Module. This involves registration of the chemical supplier's legal business name, location, and contact information with the ZDHC Gateway - Chemical Module.
- The chemical supplier registers the chemical formulation product name and SDS with the ZDHC Gateway - Chemical Module. This registration includes uploading relevant information to allow authorised access to the current Safety Data Sheet (SDS) applicable to the country the formulation is being used in. These should be prepared according to ANSI Z400.1 (2004), ISO 11014(1), EC 1907/2006 (REACH), EC 2001/58, GHS (Global Harmonised System), or JIS Z 7250:2005 (Part 1)].

## 2. Level 0 (Provisional)

ZDHC MRSL Conformance Level 0 is the lowest level of confidence in meeting the ZDHC MRSL requirements. This means there is no review by a ZDHC accepted third-party of the information provided by the chemical supplier. This conformance level is valid for 12 months and must be renewed at a higher level of conformance after that time.

Level 0 conformance requires that a chemical supplier and SDS are registered with the ZDHC Gateway - Chemical Module (see more on this in Section C.1) and that a chemical supplier has submitted a self-declaration of ZDHC MRSL conformity.

The chemical supplier should make available a self-declaration of ZDHC MRSL conformity based on the guidance of ISO/IEC Standard 17050, Parts 1 and 2. Under these standards, self-declarations of conformity are based on the results of an appropriate conformity assessment technique and provide enough information for the recipient of the declaration to understand which conformity assessment claim is being made, including:

- name and address of the issuer
- unique identification
- statement of conformity
- date and place of issue of the declaration
- a signature or equivalent of the authorised person
- any limitations (e.g. geographical)
- a complete and clear list of the specified requirements (e.g. standards) as well as selected options (if relevant)
- identification of the object of conformity (e.g. the product, process, service, management system etc.)

In addition, the issuer should have procedures in place to ensure continued conformity and the issuer should maintain a technical file for each declaration which should contain:

- a description of the object of conformity (product, process, services etc.)
- design documentation
- conformity assessment results, including: methods used (auditing, audit procedures, batch testing, design review, verification and validation, sampling plan, test methods, type testing) and reasons for their selection
- results
- evaluation of the results, including deviations and concessions
- identification and competence records of people and organizations involved in producing and reviewing conformity assessment results.

## 3. Level 1

MRSL Conformance Level 1 requires a third-party review of documentation or an analytical test report where the data meet the Quality Assurance and Quality Control requirements in Annex A to be accepted as evidence of conformance.
The third-party review is accomplished by having a certification for the chemical formulation from ZDHC accepted third-party certifier who has reviewed at least:

- the current Safety Data Sheet (SDS) prepared according to ANSI Z400.1 (2004), ISO 11014(1), EC 1907/2006 (REACH), EC 2001/58, GHS (Global Harmonised System), or JIS Z 7250:2005 (Part 1).
- the self-declaration of ZDHC MRSL conformity based on the guidance of ISO/IEC Standard 17050, Parts 1 and 2.
- any other information (which may include test data) the certifier requires relevant to assuring MRSL conformance and completeness of the SDS and the self-certification. OR
- Test data following the Quality Assurance and Quality Control requirements of Annex A is required. This testing will be so-called "smart-testing" targeted to chemical substances relevant to the formulation. These test data should meet the requirements of Annex A and be from a certified chemical testing laboratory. Analytical reports will be valid for two years from the date of analysis. Suppliers should be prepared to provide appropriate QC information about the chemical analysis. This may include data on blank samples, spiked samples, calibrations, etc.

## 4. Level 2

MRSL Conformance Level 2 requires:

- all the elements of MRSL Conformance level 1
- a review of the product stewardship practices (health, safety and environment) of the chemical supplier by the third-party certifier. This may include, but is not limited to:
    - analytical test data
    - evidence that manufacturing is conducted according to ISO (or equivalent) standards for quality management systems or environmental management systems
    - a commitment to the Responsible Care© initiative (e.g. via direct membership or via membershio of a trade association committed to the initiative)
    - demonstrating that they have appropriate wastewater treatment and waste handling procedures in place
    - a commitment to worker health and safety

## 5. Level 3

MRSL Conformance Level 3 requires all the elements of MRSL Conformance Level 2 and a site visit to the chemical supplier to evaluate their product stewardship first-hand.

# D. Acceptance of MRSL Conformance Certifying Bodies

The ZDHC Programme will review the management systems and practices of third-parties who want their system to become ZDHC accepted as indicators of conformance. Requirements for these third-parties are described below and are based on ISO 17065. A checklist of the elements is provided in Annex B.

## 1. General Requirements for Certification Body

### 1.a Responsibility

**Legal Structure**

The certification body shall be a legal entity, or a defined part of a legal entity, such that the legal entity can be held legally responsible for all its certification activities.

**Certification Agreement**

The certification body shall provide its certification service based on an agreement signed by the applicants. The agreement shall include:

- a description of the rights and duties of the applicants offering certified products, including a commitment to comply with the certification, also, implementing appropriate changes when the certification body communicates them.
- a requirement that the applicant makes all necessary arrangements for the certification body to have the right of access to all appropriate facilities, locations, areas, applicants' subcontractors and all relevant documentation and records.

**Responsibility for Certification Decisions**

The certification body shall have final responsibility for granting, maintaining, extending, suspending and withdrawing certification.

### 1.b Impartiality, Objectivity and Non-discriminatory

**Impartiality**

All certification activities shall be undertaken impartially. The certification body shall not allow commercial, financial or other pressure to compromise impartiality.

To manage impartiality, the certification body shall identify, analyse and document any risks to impartiality and work to minimise these risks. This shall include those risks that arise from its activities, relationships, or from the relationships of its personnel.

**Non-discriminatory Conditions**

The certification body shall make its services accessible to all applicants whose activities fall within the scope of its operation. Access to the certification process shall not be conditional upon the size of the client or membership of any association or group, nor the number of certifications already issued. There shall not be undue financial burden (e.g. with regard to the fee structure) or other burdensome conditions imposed on the applicant.

### 1.c Access to Information

**Transparency**

Certification bodies should provide:

- public access to, or disclosure of, certification requirements
- information on procedures for application including the rules and procedures for granting, maintaining, extending or reducing the scope of, for suspending, for withdrawing or for rejecting certification
- the fee structure for its services.
- a description of the rights and duties of applicants, including requirements, restrictions or limitations
- information on procedures for handling general complaints and appeals

**Use of Certificates**

The certification body shall exercise control over ownership, use and display of certificates and any other mechanisms for indicating a product is certified.

The certification body will have a procedure to manage and prevent incorrect references to the certification scheme, or misleading use of certificates, marks or any other mechanism for indicating a chemical product is by that body.

### 1.d Confidentiality

The certification body shall make adequate arrangements, through legally enforceable commitments, to safeguard the confidentiality of the information obtained during the performance of all certification activities.

### 1.e Resource

**Personnel**

The certification body shall employ sufficient and competent personnel to perform certification activities. The certification body shall ensure that the personnel have competent knowledge relevant to the application processes of the products in the downstream fields. The certification body shall identify training needs and provide training as necessary on certification scheme requirements.

The certification body shall require personnel involved in the certification process to declare any prior/present association on

their own part, or the part of their employer with the applicant seeking certification to which they are assigned to perform certification procedures. The certification body shall use this information to identify risks to impartiality raised by activities of such personnel.

**Resource for Evaluation**
When the certification body performs evaluation activities, the resource used should meet relevant requirements. If the certification body outsources any evaluation activities (such as testing, inspection, and auditing), the certification body shall ensure it only outsources to bodies that meet the applicable requirements.

A legally-binding contract should be signed by responsible persons from both sides. The certification body shall take full responsibility for all outsourced activities. The complete process should never be outsourced.

**Adequate Facilities and Equipment**
The certification body shall ensure that their testing facility and equipment (internal or external) meet their certification system requirements.

### 1. f Quality Management System

**General**
The certification body shall establish and maintain a quality management system to impart confidence in its ability to perform certification.

**Management System Manual**
The certification body shall establish, document and maintain all applicable procedures in a manual or documents, to ensure uniform and consistent application.

The manual shall contain:
- the policy and objectives
- an organisation chart with a clear indication of authority and responsibilities
- a description of procedures applied by the certification body in the course of performing certification, including granting, maintaining, renewing, extending, suspending and withdrawing of certification
- the procedures for the recruitment, selection, training and assignment of the certification body's personnel
- the policy and procedures for appeal against certification decisions and other complaints
- the policy and procedures for reviewing quality

All personnel involved in certification activities shall have access to the manual and relevant documentation.

**Document Control**

The certification body shall establish and maintain procedures to control its documents that relate to its certification functions.

The certification body shall:

- approve documents for adequacy prior to issue
- ensure all relevant documents are up-to-date
- control the distribution of all documents to ensure the appropriate documentation is provided to relevant personnel

**Operational Control**

The certification body shall establish and maintain operational control procedures to ensure the quality management system is implemented throughout all its activities.

**Record Control**

The certification body shall establish and maintain a system of record keeping. Records include evidence that the certification procedures have been effectively fulfilled including: application forms, evaluation reports, documents relating to granting, renewing, extending, suspending and withdrawing certification.

The system shall ensure the integrity of the process and the confidentiality of the information. Records shall also be kept for a minimum period of five years, or according to local legislation.

**Internal Audit**

The certification body shall seek for, and achieve, continuous quality improvement. It shall perform internal audits according to the type, scope and volume of certification performed. The interval between two internal audits has to be determined in a way to fully ensure the objective of quality management is fulfilled.

**Management Review**

The certification body shall ensure that the management of the certification body reviews the performance of the quality management system periodically, in order to ensure its continuing suitability, adequacy and effectiveness.

The management review shall give input relating to the internal audit results, feedback from clients and interested parties, follow-up actions from previous reviews, changes that could affect the management system, and, appeals and complaints. The management review shall be able to give output regarding the improvement of the effectiveness of the management system, its processes, and resource needs.

### 1. g Certification Decision

The certification body retains the authority to make decisions regarding all aspects of certification.

### 1. h Documentation

The certification body shall provide their applicants with formal certification documentation which clearly indicates the certification status.

The certification document shall include:

- the scope of certification
- the date, name and address of the applicant, and, the name and address of the certification body
- the signature of the responsible person from the certification body

The certification body shall always maintain up-to-date information on certified products which contain (at minimum) the identification of the product, the version of the ZDHC MRSL the product was assessed against, and identification of the applicant.
These should be provided in a way that allows for data interchange with the ZDHC Gateway - Chemical Module. The identity of certified products shall be made available to related interested parties such as clients of the applicants and ZDHC contributors.

## 2. Approval Process

### 2.a Application Submission and Contract

The ZDHC Programme or its designee will review and accept new third-party certification bodies. To do this, the certifying body should submit an application and if accepted, the system will be reviewed as described below.

### 2.b Schedule

The ZDHC Programme or its designee will develop a schedule to review the certification system and send a self-assessment questionnaire to the certifying body.

### 2. c Self-Assessment and Review

The ZDHC Programme or its designee will review the self-assessment and ask for supporting documentation addressing the requirements shown above in Section C. The certifying body will send any requested documentation to the ZDHC Programme. If needed, the ZDHC Programme may conduct a phone or in-person review of the certifying body.

### 2. d Findings

After the self-assessment and review, the ZDHC Programme or its designee will discuss any findings with the certifier. Following the correction of any needed actions, the ZDHC Programme or its designee will make a final decision as to whether it will accept and accredit the certifier.
The ZDHC Programme may also grant provisional acceptance of third-party certifiers for a fixed time period.

### 2. e Decision and Review

In the event  the ZDHC Programme declines to grant full or provisional acceptance, the certification body may appeal the decision to an independent appeals board established by the ZDHC Programme.

# E. Annex A – Quality Control Guidance for Analytical Test Data Supporting ZDHC MRSL Conformance

Below are recommended conditions and quality expectations for testing chemical formulations. These will be updated as new information becomes available. Testing is based on a "smart" approach, i.e. not every type of chemical formulation needs to be tested for each MRSL parameter (table 1, chapter C).

Lab certification (e.g. UKAS, HKAS, ISO 17025) is **not** a sufficient guarantee that the laboratory can consistently produce acceptable, quality data.

This guidance is intended to allow for performance-based methodologies for testing.
In other words, there may be differences in analytical methods to some extent, however the methods should meet the same quality requirements in Table 2, to allow for comparability while allowing for advancements in analytical techniques.

**Table 1. Recommended Tests Per Formulation Type ("smart testing")**

| CHEMICAL FORMULATION TYPE | SUBSTANCE GROUPS AND SUBSTANCES MENTIONED IN MRSL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use Code | AP & APEO | Chlorobenzenes + Toluenes | Chlorophenols | Carc. Aromatic Amines | Navy BlueDyes | Dye-Carc.Or Equiv. | Dye-Disperse | Flame Retardants | Glycols | Solvents, Halo. | Organotins | PAH | PFC | Phthalates | Heavy Metals (As, Hg, Cd, Pb, CrVI) | VOC |
| **1.1 Auxiliaries and finishing agents for fibres and yarns** | | | | | | | | | | | | | | | | |
| 1.1.1 Spinning solution additives | X | | | | | | | | (x) | | | | | | | |
| 1.1.2 Spinning additives | X | | | | | | | | (x) | | | X | | | | X |
| 1.1.3 Spinning bath additives | X | | | | | | | | (x) | | | | | | | |
| 1.1.4 Preparation agents | X | | | | | | | | (x) | | | | | | | |
| 1.1.5 Lubricants | X | | | | | | | | X | | | | | | | |
| 1.1.6 Coning oils, warping and twisting oils | X | | | | | | | | | | | X | | | | X |
| 1.1.7 Conditioning and stabilizing agents | X | | | | | | | | | | | | | | | |

X = Substances associated with this formulation type.

(x) Substances might occur, additional information necessary to determine whether testing needed.

| CHEMICAL FORMULATION TYPE | SUBSTANCE GROUPS AND SUBSTANCES MENTIONED IN MRSL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use Code | AP & APEO | Chlorobenzenes + Toluenes | Chlorophenols | Carc. Aromatic Amines | Navy BlueDyes | Dye-Carc.Or Equiv. | Dye-Disp | Flame Retardants | Glycols | Solvents, Halo. | Organotins | PAH | PFC | Phthalates | Heavy Metals (As, Hg, Cd, Pb, CrVI) | VOC |
| **1.2 Pretreatment agents** | | | | | | | | | | | | | | | | |
| 1.2.1 Fibre protecting agents in pretreatment | | | | | | | | | (x) | | | | | | | |
| 1.2.2 Kierboiling/Scouring auxiliaries | | | | | | | | | | | | | | | X | |
| 1.2.3 Bleaching auxiliaries | | | | | | | | | | | | | | | X | |
| 1.2.4 Mercerising and causticizing auxiliaries | | | | | | | | | | | | | | | X | |
| 1.2.5 Carbonizing assistants | | | | | | | | | | | | | | | X | |
| 1.2.6 Sizing agents and sizing additives | X | | | | | | | | (x) | | | | | | | |
| 1.2.7 Desizing agents | X | | | | | | | | (x) | | | | | | | |
| 1.2.8 Hydrophilizing agents | X | | | | | | | | (x) | | | | | | | |
| 1.2.9 Enzymes | | | | | | | | | | | | | | | | |
| 1.2.10 Sequestering Agents | | | | | | | | | | | | | | | | |
| 1.2.11 Stabilizers | | | | | | | | | | | | | | | | |
| **1.3 Textile auxiliaries for dyeing and printing** | | | | | | | | | | | | | | | | |
| 1.3.1 Dyestuff solubilizing and hydrotropic agents | X | | | | | | | | X | | | | | X | | |
| 1.3.2 Dispersing agents and protective colloids | X | | | | | | | | X | | | X | | | | |
| 1.3.3 Dyeing wetting agents, dearation agents | X | | | | | | | | X | | | | | | | |
| 1.3.4 Leveling agents | X | | | | | | | | X | | | | | | | |
| 1.3.5 Carriers | X | | | | | | | | X | | | X | | X | | X |
| 1.3.6 Crease-preventing agents | X | | | | | | | | X | | | | | | | |
| 1.3.7 Dyestuffs protecting agents, boildown protecting agents | X | | | | | | | | X | | | | | | | |
| 1.3.8 Padding Auxiliaries | | | | | | | | | | | | | | | | |
| 1.3.8.1 Anti-migration agents | X | | | | | | | | | | | | | | | |
| 1.3.8.2 Anti-frosting auxiliaries | X | | | | | | | | X | | | | | | | |
| 1.3.8.3 Products increasing wet-pick-up | X | | | | | | | | X | | | | | | | |
| 1.3.9 Fix accelarators for continuous dyeing and printing | X | | | | | | | | X | | (x) | | | | | |

| CHEMICAL FORMULATION TYPE | SUBSTANCE GROUPS AND SUBSTANCES MENTIONED IN MRSL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use Code | AP & APEO | Chlorobenzenes + Toluenes | Chlorophenols | Carc. Aromatic Amines | Navy BlueDyes | Dye-Carc.Or Equiv. | Dye-Disp | Flame Retardants | Glycols | Solvents, Halo. | Organotins | PAH | PFC | Prthalates | Heavy Metals (As, Hg, Cd, Pb, CrVI) | VOC |
| 1.3.10 Aftertreatment agents for fastness improvement | X | | | | | | | | X | | | | | | | |
| 1.3.11 Bonding agent (binders) for pigment dyeing and printing | X | | | | | | | | X | | X | X | | X | X | X |
| 1.3.12 Printing thickeners | X | | | | | | | | X | | X | X | | X | X | X |
| 1.3.13 Emulsifiers for gasoline printing (white spirit for oil-water emulsion printing) | X | | | | | | | | (x) | | | | | | | |
| 1.3.14 Agents to remove printing thickeners | X | | | | | | | | X | | | | | | | |
| 1.3.15 Printing and edge adhesives | X | | | | | | | | X | | X | X | | X | X | X |
| 1.3.16 Oxidizing agents | | | | | | | | | | | | | | | X | |
| 1.3.17 Reducing agents | | | | | | | | | | | | | | | | |
| 1.3.18 Discharging agents and discharging assistants | X | | | | | | | | (x) | | | | | | | |
| 1.3.19 Resistant agents | X | | | | | | | | (x) | | | | | | | |
| 1.3.20 Mordants | | | | | | | | | | | | | | | X | |
| 1.3.21 Brightening and stripping agents | X | | | X | X | X | X | | X | | | | | | | |
| 1.3.22 Fibre-protective agents in dyeing | X | | | | | | | | X | | | | | | | |
| 1.3.23 pH-regulators, acid and alkali dispensers | X | | | | | | | | | | | | | | | |
| 1.3.24 Adhesives | X | | | | | | | | X | | X | X | | X | X | X |
| 1.3.25 PVC-based (Plastisols) Ready to Use Printing Pastes | | | | X | | | | | | | | | | X | X | |
| 1.3.26 Water-based Ready to Use Printing Pastes | X | | | (X) | (X) | (X) | (X) | | X | | X | | | X | X | X |
| 1.3.27 Other Pigment Based Ready to Use Printing Pastes | X | | X | (X) | (X) | (X) | (X) | | | | X | | | X | X | X |
| **1.4 Finishing assistants** | | | | | | | | | | | | | | | | |
| 1.4.1 Optical brighteners (fluorescent brighteners) | X | | | X | X | X | X | | X | | | | | | | |
| 1.4.2 Agents for the improvement of crease and shrink resistance | X | | | | | | | | (x) | | | | | | | |
| 1.4.3 Additives for non-creasing and non-shrinking finishes | X | | | | | | | | (x) | | | | | | | |
| 1.4.4 Catalysts for non-creasing and non-shrinking finishes | X | | | | | | | | (x) | | | | | | | |

| CHEMICAL FORMULATION TYPE | SUBSTANCE GROUPS AND SUBSTANCES MENTIONED IN MRSL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use Code | AP & APEO | Chlorobenzenes + Toluenes | Chlorophenols | Carc. Aromatic Amines | Navy BlueDyes | Dye-Carc.Or Equiv. | Dye-Disp | Flame Retardants | Glycols | Solvents, Halo. | Organotins | PAH | PFC | Phthalates | Heavy Metals (As, Hg, Cd, Pb, CrVI) | VOC |
| 1.4.5 Handle-imparting agents | X | | | | | | | | | | | | | | | |
| 1.4.5.1 Weighting agents | X | | | | | | | | | | | | | | X | |
| 1.4.5.2 Filling and stiffening agents | X | | | | | | | | | | X | | | X | X | X |
| 1.4.5.3 Softening agents | X | | | | | | | | X | | X | | | | | |
| 1.4.6 Anti-electrostatic agent | X | | | | | | | | X | | | | | | | |
| 1.4.7 Water, stain and oil repellents | X | | | | | | | | (x) | | X | | X | | | |
| 1.4.8 Soil release agents | X | | | | | | | | (x) | | X | | X | | | |
| 1.4.9 Felting Agents | X | | | | | | | | | | | | | | | |
| 1.4.10 Anti-felting agents | X | | | | | | | | | | | | | | | |
| 1.4.11 Conditioning agents | X | | | | | | | | (x) | | | | | | | |
| 1.4.12 Lustering agents | X | | | | | | | | (x) | | | | | | | |
| 1.4.13 Delustering agents | | X | | X | | | | | | | | X | | | X | X |
| 1.4.14 Non-slip, ladder-proof and anti-snag agents | X | | | | | | | | X | | X | | | X | | |
| 1.4.15 Flame retardants | | | | | | | | X | X | | X | | | X | X | |
| 1.4.16 Anti-microbiotics | | | | | | | | | | | | | | | | |
| 1.4.16.1 Finishing | | | | | | | | | X | | X | | | | | |
| 1.4.16.2 Storage stability | | | | | | | | | | | X | | | | | |
| 1.4.17 Agents to protect textiles against damage caused by insects and threads | | | | | | | | | (x) | | X | | | | | |
| 1.4.18 Agents and additives to promote bonding of fibres and threads | X | | | | | | | | (x) | | X | X | | X | | |
| 1.4.19 Coating agents as well as according additives | | | | | | | | (x) | X | | X | X | X | X | X | X |
| 1.4.20 Laminating agents as well as according additives | | | | | | | | (x) | (x) | | X | | X | X | X | |
| 1.4.21 UV Protection | | | | | | | | | | | | | | | | |

| CHEMICAL FORMULATION TYPE | SUBSTANCE GROUPS AND SUBSTANCES MENTIONED IN MRSL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use Code | AP & APEO | Chlorobenzenes + Toluenes | Chlorophenols | Carc. Aromatic Amines | Navy BlueDyes | Dye-Carc.Or Equiv. | Dye-Disp | Flame Retardants | Glycols | Solvents, Halo. | Organotins | PAH | PFC | Phthalates | Heavy Metals (As, Hg, Cd, Pb, CrVI) | VOC |
| **1.5 Technical auxiliaries for multipurpose use in the textile industry** | | | | | | | | | | | | | | | | |
| 1.5.1 Wetting agents | X | | | | | | | | X | | | | | | | |
| 1.5.2 Anti-foaming agents (foam inhibitors) | X | | | | | | | | X | | | X | | | | X |
| 1.5.3 Detergents, dispersing and emulsifying agents | X | | | | | | | | X | | | | | | | |
| 1.5.4 Spotting agents | X | | | | | | | | X | | | | | | | |
| 1.5.5 Chelating agents | X | | | | | | | | | | | | | | | |
| 1.5.6 Stabilizers | X | | | | | | | | (x) | | | | | | | |
| **1.6. Other Auxiliaries** | | | | | | | | | | | | | | | | |
| 1.6.1 Dry Cleaning Detergents | | | | | | | | | | | | | | | | |
| 1.6.2 Prespotting Agents | | | | | | | | | | | | | | | | |
| 1.6.6 Defoaming Agents for solvent application | | | | | | | | | | | | | | | | |
| 1.6.7 Resin Permanent | | | | | | | | | | | | | | | | |
| 1.6.8 Resin Thermoplastic | | | | | | | | | | | | | | | | |
| 1.6.9 Resin Thermosetting | | | | | | | | | | | | | | | | |
| 1.6.10 Soaping | | | | | | | | | | | | | | | | |
| 1.6.11 Other Auxiliaries | no specific guidance - the test depends on the product type | | | | | | | | | | | | | | | |

| CHEMICAL FORMULATION TYPE | SUBSTANCE GROUPS AND SUBSTANCES MENTIONED IN MRSL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use Code | AP & APEO | Chlorobenzenes + Toluenes | Chlorophenols | Carc. Aromatic Amines | Navy BlueDyes | Dye-Carc.Or Equiv. | Dye-Disp | Flame Retardants | Glycols | Solvents, Halo. | Organotins | PAH | PFC | Phthalates | Heavy Metals (As, Hg, Cd, Pb, CrVI) | VOC |
| **1.7 Dyes and pigments** | | | | | | | | | | | | | | | | |
| 1.7.1 Pigments | | | | X | | | | | | | | | | | X | X |
| 1.7.2 Reactive dye | X | | X | X | | | | | | | | | | | X | |
| 1.7.3 Sulfur dye | X | X | X | X | | | | | | | | X | | | X | |
| 1.7.4 Mordant dye | X | | X | X | | | | | | | | | | | X | |
| 1.7.5 Direct dye | X | | X | X | | X | | | | | | | | | X | |
| 1.7.6 Disperse dye | X | X | X | X | | X | X | | | | | X | | | X | |
| 1.7.7 Basic dye (cationic dye) | X | | X | X | | X | | | | | | X | | | X | |
| 1.7.8 Acid dye | X | | X | X | | X | | | | | | | | | X | |
| 1.7.9 Metal complex dyes (for WO / PA) | X | | X | X | | | | | | | | | | | X | |
| 1.7.10 Vat dye | X | X | X | X | | | | | | | | X | | | X | |
| **8. Anciliaries** | | | | | | | | | | | | | | | | |
| 1.8.1 Cleaning/Maintenance Products | no specific guidance - the test depends on the product type | | | | | | | | | | | | | | | |
| 1.8.2 Other Anciliares | no specific guidance - the test depends on the product type | | | | | | | | | | | | | | | |

X = Substances associated with this formulation type.

(x) Substances might occur, additional information necessary to determine whether testing needed.

## Table 2. Recommended Quality Assurance Criteria for Chemical Testing

| Parameters | QC Type | Frequency | Control Limits | Corrective Action |
|---|---|---|---|---|
| General | Any method specific criteria tighter than those specified below must be adhered to. Any additional method specific Quality Assurance and Quality Control elements and criteria not included in the table below must be adhered to. | | | |
| Organics | Method blank | 1/batch | All target compounds below project reporting limit | Check system, re-analyse affected samples |
| | Surrogates | Every sample | Method specific | Re-extract if SS fails low. Review, re-analyse based on technical judgment if SS fails high. |
| | Internal Standards | Every sample | 50%-150% of the response of the midpoint of the ICAL | Re-prepare and re-analyse sample to verify ISTD spiked properly. If low recovery verified, flag results with remarks. |
| | Laboratory Control Standard (LCS) | 1/batch | Method specific | Re-extract all samples associated with failing LCS unless LCS fails high and the sample has no analyte detected. |
| | Calibration Check (CC) | 1/batch | ±25% for all reported analytes or the method specified criteria, whichever is tighter | Assess system for problems, fix and/or recalibrate. Re-analyze all samples associated with a failing QC. If the matrix is confirmed as the cause of the failure after a re-analysis, flag results with remarks. |
| | Duplicate (DUP) | 1/batch | RPD <35% or method specified limits, whichever is tighter. | Flag results with remarks. |
| | Matrix Spike, Matrix Spike Duplicate (MS/MSD) | 1/batch/matrix | Method specific | Flag results with remarks. |
| | Method Detection Limit (MDL) | Annually. Quarterly confirmation by LOD ok. | <1/2 the reporting limit for all analytes. | Check system, re-prepare and re-analyse MDL study. |
| | Multi-point Calibration | 5 points minimum, run annually (at a minimum) or as needed. Do not include origin. | Method specific. | Check system. Check standards. Repair. Recalibrate. |

## Table 3. Recommended Analytical Methods and Reporting Limits

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers | | | | |
| 104-40-5<br>11066-49-2<br>25154-52-3<br>84852-15-3 | Nonylphenol (NP), mixed isomers | (Textile)<br>GB/T 23972-2009<br><br>(Leather)<br>EN ISO 18219-1<br>EN ISO 18219-2 | 250 ppm | (HPLC) LC-MS<br>GC-MS |
| 140-66-9<br>1806-26-4<br>27193-28-8 | Octylphenol (OP), mixed isomers | | 250 ppm | |
| 9002-93-1<br>9036-19-5<br>68987-90-6 | Octylphenol ethoxylates (OPEO) | | 500 ppm | |
| 9016-45-9<br>26027-38-3<br>37205-87-1<br>68412-54-4<br>127087-87-0 | Nonylphenol ethoxylates (NPEO | | 500 ppm | |
| Chlorobenzenes and Chlorotoluenes | | | | |
| 95-50-1 | 1,2-dichlorobenzene | | 1000 ppm | GC-MS |
| Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- Chlorobenzene and mono-, di-, tri-, tetra- and penta- chlorotoluene | | | Sum = 200 ppm | |
| Chlorophenols | | | | |
| 25167-83-3 | Tetrachlorophenol (TeCP) | (Textile)<br>GB/T 18414.1<br>GB/T 18414.2<br><br>GB/T 24166<br><br>(Leather)<br>EN ISO 17070 | Sum = 20 ppm | GC-MS |
| 87-86-5 | Pentachlorophenol (PCP) | | | |
| 4901-51-3 | 2,3,4,5-tetrachloro-phenol | | Sum = 50 ppm | |
| 58-90-2 | 2,3,4,6-tetrachloro-phenol | | | |
| 935-95-5 | 2,3,5,6-tetrachloro-phenol | | | |
| 95-57-8 | 2-chlorophenol | | | |
| 120-83-2 | 2,4-dichlorophenol | | | |
| 583-78-8 | 2,5-dichlorophenol | | | |
| 87-65-0 | 2,6-dichlorophenol | | | |
| 95-95-4 | 2,4,5-trichlorophenol | | | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-trichlorophenol | (Textile)<br>GB/T 18414.1<br>GB/T 18414.2<br><br>GB/T 24166<br><br>(Leather)<br>EN ISO 17070 | Sum = 20 ppm | GC-MS |
| 591-35-5 | 3,5-dichlorophenol | | | |
| 576-24-9 | 2,3-dichlorophenol | | Sum = 50 ppm | |
| 95-77-2 | 3,4-dichlorophenol | | | |
| 108-43-0 | 3-chlorophenol | | | |
| 106-48-9 | 4-chlorophenol | | | |
| 15950-66-0 | 2,3,4-trichlorophenol | | | |
| 933-78-8 | 2,3,5-trichlorophenol | | | |
| 609-19-8 | 3,4,5-trichlorophenol | | | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Dyes – Azo (Forming Restricted Amines) | | | | |
| 101-14-4 | 4,4-methylene-bis-(2-chloro-aniline) | Textile) SN/T 1045.1 SN/T 1045.2 SN/T 1045.3 (60-09-3) GB/T 23344 GB/T 24101 (Leather) EN ISO 17234-1 EN ISO 17234-2 | 150 ppm | LC-MS GC-MS |
| 101-77-9 | 4,4-methylenedianiline | | 150 ppm | |
| 101-80-4 | 4,4-oxydianiline | | 150 ppm | |
| 106-47-8 | 4-chloroaniline | | 150 ppm | |
| 119-90-4 | 3,3-dimethoxylbenzidine | | 150 ppm | |
| 119-93-7 | 3,3-dimethylbenzidine | | 150 ppm | |
| 120-71-8 | 6-methoxy-m-toluidine | | 150 ppm | |
| 137-17-7 | 2,4,5-trimethylaniline | | 150 ppm | |
| 139-65-1 | 4,4-thiodianiline | | 150 ppm | |
| 60-09-3 | 4-aminoazobenzene | | 150 ppm | |
| 615-05-4 | 4-methoxy-m-phenyl-enediamine | | 150 ppm | |
| 838-88-0 | 4,4-methylenedi-o-toluidine | | 150 ppm | |
| 87-62-7 | 2,6-xylidine | | 150 ppm | |
| 90-04-0 | o-anisidine | | 150 ppm | |
| 91-59-8 | 2-naphthylamine | | 150 ppm | |
| 91-94-1 | 3,3-dichlorobenzidine | | 150 ppm | |
| 92-67-1 | 4-aminodiphenyl | | 150 ppm | |
| 92-87-5 | Benzidine | | 150 ppm | |
| 95-53-4 | o-toluidine | | 150 ppm | |
| 95-68-1 | 2,4-xylidine | | 150 ppm | |
| 95-69-2 | 4-chloro-o-toluidine | | 150 ppm | |
| 95-80-7 | 4-methyl-m-phenylene-diamine | | 150 ppm | |
| 97-56-3 | o-aminoazotoluene | | 150 ppm | |
| 99-55-8 | 5-nitro-o-toluidine | | 150 ppm | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Dyes – Navy Blue Colourant | | | | |
| 118685-33-9 | Component 1: C39H23Cl-CrN7O12S 2Na | | 250 ppm | LC |
| Not Allocated | Component 2: C46H-30CrN10O20S2 3Na | | 250 ppm | |
| Dyes – Carcinogenic or Equivalent Concern | | | | |
| 1937-37-7 | 4,4-oxydianiline | (Textile) GB/T 20382 SN/T 3227 (Leather) GB/T 30399 | 250 ppm | LC |
| 2602-46-2 | 4-chloroaniline | | 250 ppm | |
| 3761-53-3 | 3,3-dimethoxylbenzidine | | 250 ppm | |
| 569-61-9 | 3,3-dimethylbenzidine | | 250 ppm | |
| 573-58-0 | 6-methoxy-m-toluidine | | 250 ppm | |
| 632-99-5 | 2,4,5-trimethylaniline | | 250 ppm | |
| 2475-45-8 | 4,4-thiodianiline | | 250 ppm | |
| 2475-46-9 | 4-aminoazobenzene | | 250 ppm | |
| 2580-56-5 | 4-methoxy-m-phenylenedi-amine | | 250 ppm | |
| 569-64-2 | 4,4-methylenedi-o-tolui-dine | | 250 ppm | |
| 2437-29-8 | 2,6-xylidine | | 250 ppm | |
| 10309-95-2 | o-anisidine | | 250 ppm | |
| 82-28-0 | 2-naphthylamine | | 250 ppm | |
| Dyes – Disperse (Sensitising) | | | | |
| 119-15-3 | Disperse Yellow 1 | (Textile) GB/T 20383 (Leather) GB/T 30398 | 250 ppm | LC |
| 12222-97-8 | Disperse Blue 102 | | 250 ppm | |
| 12223-01-7 | Disperse Blue 106 | | 250 ppm | |
| 12236-29-2 | Disperse Yellow 39 | | 250 ppm | |
| 13301-61-6 | Disperse Orange 37/59/76 | | 250 ppm | |
| 23355-64-8 | Disperse Brown 1 | | 250 ppm | |
| 2581-69-3 | Disperse Orange 1 | | 250 ppm | |
| 2832-40-8 | Disperse Yellow 3 | | 250 ppm | |
| 2872-48-2 | Disperse Red 11 | | 250 ppm | |
| 2872-52-8 | Disperse Red 1 | | 250 ppm | |
| 3179-89-3 | Disperse Red 17 | | 250 ppm | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Dyes – Navy Blue Colourant | | | | |
| 3179-90-6 | Disperse Blue 7 | | 250 ppm | |
| 3860-63-7 | Disperse Blue 26 | | 250 ppm | |
| 54824-37-2 | Disperse Yellow 49 | | 250 ppm | |
| 12222-75-2 | Disperse Blue 35 | | 250 ppm | |
| 61951-51-7 | Disperse Blue 124 | | 250 ppm | |
| 6373-73-5 | Disperse Yellow 9 | | 250 ppm | |
| 730-40-5 | Disperse Orange 3 | | 250 ppm | |
| 56524-77-7 | Disperse Blue 35 | | 250 ppm | |
| Fat liquoring agents | | | | |
| 85535-84-8 | Short-chain Chlorinated paraffin (C10'– C13) | (Leather) EN ISO 18219 | 250 ppm | GC/ECNI-MS |
| Flame Retardants | | | | |
| 115-96-8 | Tris(2-chloroethyl) phosphate (TCEP) | (Textile) GB/T 29493.1-2013 | 250 ppm | GC-MS |
| 1163-19-5 | Decabromodiphenyl ether (DecaBDE) | | 250 ppm | |
| 126-72-7 | Tris(2,3,-dibromopro-pyl)-phosphate (TRIS) | | 250 ppm | |
| 32534-81-9 | Pentabromodiphenyl ether (PentaBDE) | | 250 ppm | |
| 32536-52-0 | Octabromodiphenyl ether (OctaBDE) | | 250 ppm | |
| 5412-25-9 | Bis(2,3-dibromopropyl) phosphate (BIS) | | 250 ppm | |
| 545-55-1 | Tris(1-aziridinyl)phosphine oxide) (TEPA) | | 250 ppm | |
| 59536-65-1 | Polybromobiphenyls (PBB) | | 250 ppm | |
| 79-94-7 | Tetrabromobisphenol A (TBBPA) | | 250 ppm | |
| 3194-55-6 | Hexabromocyclodecane (HBCDD) | | 250 ppm | |
| 3296-90-0 | 2,2-bis(bromometh-yl)-1,3-propanediol (BBMP) | | 250 ppm | |
| 13674-87-8 | Tris(1,3-dichloro-isopropyl) phosphate (TDCP) | | 250 ppm | |
| 85535-84-8 | Short-chain chlorinated Paraffins (SCCP) (C108C13) | | (textiles) 50 ppm (leather) 250 ppm | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Glycols / Glycol Ethers | | | | |
| 111-96-6 | Bis(2-methoxyethyl)-ether | | 50 ppm | |
| 110-80-5 | 2-ethoxyethanol | | 50 ppm | |
| 111-15-9 | 2-ethoxyethyl acetate | | 50 ppm | |
| 110-71-4 | Ethylene glycol dimethyl ether | | 50 ppm | |
| 109-86-4 | 2-methoxyethanol | | 50 ppm | |
| 110-49-6 | 2-methoxyethylacetate | | 50 ppm | |
| 70657-70-4 | 2-methoxypropylacetate | | 50 ppm | |
| 112-49-2 | Triethylene glycol dimethyl ether | | 250 ppm | |
| Halogenated Solvents | | | | |
| 107-06-2 | 1,2-dichloroethane | | 5 ppm | GC-MS |
| 75-09-2 | Methylene chloride | | 5 ppm | |
| 79-01-6 | Trichloroethylene | | 40 ppm | |
| 127-18-4 | Tetrachloroethylene | | 5 pmm | |
| Polycyclic Aromatic Hydrocarbons (PAHs) | | | | |
| 50-32-8 | Benzo[a]pyrene (BaP) | (Textile) GB/T 29493.4-2013 | 20 pmm | GC-MS |
| 120-12-7 | Anthracene | | (textile) Sum = 200 ppm<br>(leather) Sum = 200 ppm Naphthalene = 300 ppm | |
| 129-00-0 | Pyrene | | | |
| 191-24-2 | Benzo[ghi]perylene | | | |
| 192-97-2 | Benzo[e]pyrene | | | |
| 193-39-5 | Indeno[1,2,3-cd]pyrene | | | |
| 205-82-3 | Benzo[j]fluoranthene | | | |
| 205-99-2 | Benzo[b]fluoranthene | | | |
| 206-44-0 | Fluoranthene | | | |
| 207-08-9 | Benzo[k]fluoranthene | | | |
| 208-96-8 | Acenaphthylene | | | |
| 218-01-9 | Chrysene | | | |
| 53-70-3 | Dibenz[a,h]anthracene | | | |
| 56-55-3 | Benzo[a]anthracene | | | |
| 83-32-9 | Acenaphthene | | | |
| 85-01-8 | Phenanthrene | | | |
| 86-73-7 | Fluorene | | | |
| 91-20-3 | Naphthalene | | | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Perfluorinated and Polyfluorinated Chemicals (PFCs) | | | | |
| Multiple | Perfluorooctane sulfonate (PFOS) and related | (Textile) GB/T 29493.2-2013 | Sum = 2 ppm | LC- MS |
| substances | Perfluorooctanoic acid (PFOA) and related substances | | Sum = 2 ppm | |
| Phthalates – including all other esters of ortho-phthalic acid | | | | |
| 117-81-7 | Di(ethylhexyl) phthalate (DEHP) | (Textile) GB/T 24168-2009 | Sum = 250 ppm | GC-MS |
| 117-82-8 | Bis(2-methoxyethyl) phthalate (DMEP) | | | |
| 117-84-0 | Di-n-octyl phthalate (DNOP) | | | |
| 26761-40-0 | Di-iso-decyl phthalate (DIDP) | | | |
| 28553-12-0 | Di-isononyl phthalate (DINP) | | | |
| 84-75-3 | Di-n-hexyl phthalate (DnHP) | | | |
| 84-74-2 | Dibutyl phthalate (DBP) | | | |
| 85-68-7 | Butyl benzyl phthalate (BBP) | | | |
| 84-76-4 | Dinonyl phthalate (DNP) | | | |
| 84-66-2 | Diethyl phthalate (DEP) | | | |
| 131-16-8 | Di-n-propyl phthalate (DPRP) | | | |
| 84-69-5 | Di-isobutyl phthalate (DIBP) | | | |
| 84-61-7 | Di-cyclohexyl phthalate (DCHP) | | | |
| 27554-26-3 | Di-iso-octyl phthalate (DIOP) | | | |
| Total Heavy Metals | | | | |
| 7440-38-2 | Arsenic (As) | (Textile) GB/T 17593.2 (Leather) EN ISO 17075 | 50 ppm | |
| 7440-43-9 | Cadmium (Cd) | | 20 ppm (50 ppm for pigments) | |
| 7439-97-6 | Mercury (Hg) | | 4 ppm (25 ppm for pigments) | |
| 7439-92-1 | Lead (Pb) | | 100 ppm | |
| 18540-29-9 | Chromium (VI) | | 10 ppm | |

| CAS No. | Analyte / Substance | Method Reference | Reporting Limit | Analytical Technique |
|---|---|---|---|---|
| Volatile Organic Compounds (VOC) | | | | |
| 71-43-2 | Benzene | | 50 ppm | GC-MS |
| 1330-20-7 | Xylene | | 500 ppm | |
| 95-48-7 | o-cresol | | 500 ppm | |
| 106-44-5 | p-cresol | | 500 ppm | |
| 108-39-4 | m-cresol | | 500 ppm | |

# F. Annex B – Types of Documentation Expected to be Reviewed for Acceptance Process

| # | Documentation |
|---|---|
| 1 | Statement of qualifications and expertise |
| 2 | Organisational chart |
| 3 | CVs for key personnel |
| 4 | Certification process |
| 5 | Accreditations, certifications and licenses |
| 6 | Laboratory certifications (if applicable) |
| 7 | Quality assurance practices , e.g. internal audit process and corrective action process |
| 8 | Example certification |
| 9 | Complaints records |
| 10 | Additional documents as requested to support the review |

# G. Glossary

**Accreditation:** Accreditation is the formal recognition by an independent body, generally known as an accreditation body, that a certification body operates according to international standards.

**Certification:** Certification means that a certified formulation has written assurance, such as a certificate, from an independent body confirming that the product in question meets specific requirements. ZDHC MRSL certification confirms conformance with the ZDHC MRSL without additional testing.

**Chemical formulation:** A chemical formulation is a mixture of chemical substances blended together to be used by the manufacturer. A formulation is the finished chemical product in a container, ready for use.

**Chemical product:** A chemical product consists of chemicals' manufactured as substances or formulations applied onto textile, leather, synthetic leather, and other materials used in the apparel, leather and footwear industry.

**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.

**Chemical supplier:** A chemical supplier is the company providing chemical products to the industry's material suppliers such as dye houses, tanneries, etc. A chemical supplier can be a manufacturer, a formulator or re-brander of chemical products.

**Conformity assessment:** Conformity assessment means that specified requirements relating to a product, process, system, person or body are fulfilled.

**High risk:** In the context of the ZDHC MRSL conformance, high risk means that there is limited assurance that a formulation will comply with the ZDHC MRSL. A chemical company's formulation exhibits high potential for non-compliance.

**Low risk:** In the context of the ZDHC MRSL conformance, low risk means there is a high level of assurance that a formulation will comply with the ZDHC MRSL. A chemical company's formulation exhibits high potential of compliance.

**Registered:** In the context of the ZDHC MRSL conformance, registered means that a chemical company has registered their name, location, and product trade name in the Chemical Module of the ZDHC Gateway.

Registration is not self-declaration; it only identifies the product.

**Self-declaration:** Self-declaration is when a formulation manufacturer declares that its formulation is compliant with the ZDHC MRSL, on the basis of its own internal product stewardship procedures.

**Technical Data Sheet:** A technical data sheet describes how the product is to be used by the mill including information such as the amount to use per process, etc.

**Third-party testing:** In third-party testing, chemical formulation samples are tested by an accredited independent laboratory.

**Unintentional contamination:** Unintentional Contamination means chemical substances that are a result of side-reactions or contamination that are not intentionally added to chemical formulations.

**ZDHC Gateway - Chemical Module:** The ZDHC Gateway - Chemical Module is the database the ZDHC Programme is developing that will be a comprehensive list of chemical products and an MRSL conformance assessment for each. It will map products against existing chemical accreditation such as bluesign, GOTS or OEKO-Tex EcoPassport, and provide textile manufacturers with documentation to determine the level that a chemical product conforms with the ZDHC MRSL.

**ZDHC MRSL:** The ZDHC MRSL (Manufacturing Restricted Substances List) is a list of chemical substances subject to a usage restriction. The MRSL applies to chemicals used in facilities that process materials and trim parts for use in textile, leather and footwear.

**ZDHC MRSL Conformance:** ZDHC MRSL Conformance means that the chemical formulation does not contain any of the chemical substances on the ZDHC MRSL above the ZDHC MRSL threshold commercial formulation limit values.

**ZDHC MRSL Conformance Levels:** ZDHC MRSL Conformance Levels means the levels of conformance as specified in section 2.b of this document

**ZDHC Accepted Third-party or ZDHC Accepted Third-party reviewer:** A ZDHC accepted third-party or ZDHC accepted third-party reviewer is an independent certification body that is accepted by ZDHC as an indicator of ZDHC MRSL Conformance.

**ZDHC Accepted Third-party Certifier or Third-party Certification Bodies:** A ZDHC accepted third-party certifier or third-party certification body is an independent certification body that is accepted by ZDHC as an indicator of ZDHC MRSL Conformance.

**ZDHC Accepted for MRSL Conformance:** ZDHC accepted for MRSL conformance means an independent certification body that is accepted by ZDHC as an indicator of ZDHC MRSL Conformance.

**ZDHC Contributors:** ZDHC Contributors are the current list of contributors to the ZDHC Programme as found on the ZDHC website www.roadmaptozero.com

**ZDHC MRSL Advisory Group:** The ZDHC MRSL advisory group is an independent outside experts advising the ZDHC MRSL Focus Area.

## Signatory Brands

adidas GROUP · BURBERRY · C&A · coop · ESPRIT · F&F · Gap Inc. · G-STAR RAW · H&M · HUGO BOSS · INDITEX · Jack Wolfskin · KERING · Lbrands · LEVI STRAUSS & CO. · LI-NING · MARKS & SPENCER LONDON · NEW BALANCE · NIKE · PRIMARK · PUMA · PVH · UNITED COLORS OF BENETTON.

## Value Chain Affiliates

ADEC INNOVATIONS ESG SOLUTIONS · Arvind · COATS · Color Root · covestro · DR. PETRY TEXTILE AUXILIARIES · Everlight Chemical · ICEC · JINTEX · Lonsen · MAS CHANGE IS COURAGE · PolyOne · PrimeAsia QUALITY LIFESTYLE LEATHERS · SCISKY 水性科天 · SDS SUSTAINABLE DOWN SOURCE · SGS · SIAM PRO DYECHEM GROUP · stahl · TFL · Transfar 传化化工 · TÜVRheinland · TÜV SÜD · UL · yorkshire

## Associates

BEPI Business Environmental Performance Initiative · BSI Association of the German Sporting Goods Industry · CTIC 中国纺织信息中心 CHINA TEXTILE INFORMATION CENTER · ETAD Working together for safer colorants · GermanFashion Modeverband Deutschland e.V. · ITRI Industrial Technology Research Institute · OEKO-TEX® CONFIDENCE IN TEXTILES · SIWI · Sustainable Apparel Coalition · TEGEWA · UNIC Italian Tanners' Association