



European Union
European Regional
Development Fund

Methodologies and Tools for Chemicals Management

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4 April, 2017 | 3rd thematic seminar – New sustainable chemistry

Methodologies and Tools for Chemicals Management

Topics

- CITEVE brief presentation
- Good Practice in sustainable chemistry:
Methodologies and Tools for Chemicals Management
Background
ZDHC tools
STANDARD 100 (appendix 6) by OEKO-TEX®
DETOX TO ZERO by OEKO-TEX®
GM SUB tool



TEXTILE TECHNOLOGY CAMPUS

CITEVE BRIEF PRESENTATION

Methodologies and Tools for Chemicals Management

CITEVE – main areas of activity



Laboratorial Testing



Product & Process Certification

Technology & Engineering



Sustainable Production



Design & Fashion Intelligence



Training & Coaching

R&D + Innovation



Standardisation



Clusterisation and intercluster cross-fertilisation

Industry 4.0 & Shop of the Future



International consultancy

CITEVE – Worldwide



CITEVE – Committed people



GP in sustainable chemistry

METHODOLOGIES AND TOOLS FOR CHEMICALS MANAGEMENT BACKGROUND

Chemicals are key factor in the sustainability with particular relevance in the textile and clothing sector

- due not only to the **legislation** related with chemicals used, specially Regulation:
 - REACH (Regulation CE 1907/2006) » Registration, Evaluation, Authorisation and Restriction of Chemicals
 - BPR (Regulation EU 528/2012) » Biocidal Product Regulation)
- but also to **clients RSL** (restricted substance list)
- and campaigns from non-governmental organizations, such as:
 - Detox campaign** and
 - ZDHC programme**

REACH Regulation (CE 1907/2006) – levels of application in textile articles

- **Registration** of substances in articles
Substance in quantity superior to 1 ton/year and intended to be released from articles to provide added value
- **Authorization – SVHC candidate list** (substances very high concern)
Substance of the SVHC list in an article in quantity superior to 0,1%, the supplier has to provide information related with safe use of the article, as a minimum the name of the substance
And if that SVHC is present in these articles in quantities totaling over 1 ton/year, the company have to notify ECHA, no later than six months after the inclusion of the substance in the candidate list
- **Annex XIV** - list of substances **subject to authorization**
these substances cannot be placed on the market or used after a given date, unless an authorization is granted for their specific use, or the use is exempted from authorization)
- **Annex XVII restrictions**
Includes specific restrictions for textile articles and some general restriction that are relevant to textile articles)

BPR (Regulation EU 528/2012)

- Related with placing on the market and use of biocidal products
- used to protect humans, animals, materials or articles against harmful organisms, like pests or bacteria, by the action of the active substances contained in the biocidal product
- biocidal products need an authorization before they can be placed on the market, and the active substances contained in that biocidal product must be previously approved

Methodologies and Tools for Chemicals Management

Background

Number	Product-type	Description
<p>Main group 1: Disinfectants These product types exclude cleaning products that are not intended to have a biocidal effect, including washing liquids, powders and similar products</p>		
PT 2	Disinfectants and algaecides not intended for direct application to humans or animals	(...) Used to be incorporated in textiles, tissues, masks, paints and other articles or materials with the purpose of producing treated articles with disinfecting properties.
<p>Main group 2: Preservatives Unless otherwise stated these product-types include only products to prevent microbial and algal development.</p>		
PT 9	Fibre, leather, rubber and polymerised materials preservatives	Used for the preservation of fibrous or polymerised materials, such as leather, (...) or textile products by the control of microbiological deterioration. This product-type includes biocidal products which antagonise the settlement of micro-organisms on the surface of materials and therefore hamper or prevent the development of odour and/or offer other kinds of benefits.

Types of products that are relevant to textile articles

Detox campaign

- launched in 2011, by Greenpeace - intend to remove from the textile supply chain 11 categories of chemicals, until 2020
- Until now the Detox campaign has been public adopted by **nineteen brands**, namely:
Nike, Adidas, Puma. H&M, M&S, C&A, Li-Ning, Zara, Mango, Esprit, Levi's, Uniqlo, Benetton, Victoria's Secret, G-Star Raw Valentino, Coop, Canepa, Burberry and Primark

Detox campaign

- Companies commitment = adoption of measures to phase out the use and release of hazardous chemicals from their global supply chain and products. The commitment is based in three fundamental principles:

Zero discharge of all hazardous chemicals:

eliminating all releases, via waste water or other production emissions (e.g. air and solid wastes) or later life "losses" from the final product -- recognizing that there are no environmentally safe levels for hazardous substances

Prevention and Precaution: focused on elimination at source through substitution with sustainable alternatives or even product redesign

Right to know. be fully transparent and publicly disclose information about the hazardous chemicals used and discharged when making their products

Methodologies and Tools for Chemicals Management Background

ZDHC Programme

- Developed by ZDHC Foundation – intend to eliminate the use of priority chemicals in textile and footwear value chain, by focussing on the following areas:
 - 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.
 - Wastewater Quality:** minimizing chemical, physical and biological pollutants discharged into the environment
 - Audit Protocol:** was developed to ensure consistency in environmental auditing across the supply chain and sharing of audit findings.
 - Research:** list of prioritized chemical substances for which there are no safer alternatives in the market today. Require additional research or substitution
 - Data and Disclosure:** data capture, reporting and global synchronization
 - Training:** at all parts of the value chain, to adopt ambitious chemical management standards

As response to this challenges some methodologies and tools are available:

- ZDHC tools
- STANDARD 100 (appendix 6) by OEKO-TEX®
- DETOX TO ZERO by OEKO-TEX®
- GM SUB tool

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METHODOLOGIES AND TOOLS FOR CHEMICALS MANAGEMENT ZDHC TOOLS

- **Manufacturing Restricted Substances List** (version 1.1, from 2015)

list of priority chemicals and specifies the maximum concentration limit within commercial chemical formulations.

2 Chapters and 2 groups:

Chapter 1 for textiles and synthetic leather processing

Chapter 2 for natural leather processing

Group A for raw material and finished product

(substances that are banned from intentional use in facilities that process raw materials and manufacture finished products)

Group B for chemical supplier

(substances are restricted to concentration limits in chemical formulations commercially available from chemical suppliers)

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ZDHC tools

- **Interim MRSL Conformance Guidance** - perceive if a MRSL compliant formulation from a supplier actually meets the requirements of the ZDHC MRSL standard
- **MRSL Supplier Acknowledgement Letter** (template letter)
- **Chemical Guidance Sheets** (substance use, reason for restriction, and safer alternatives)
 - for chlorobenzenes, chlorophenols, halogenated solvents, organotins, polycyclic aromatic hydrocarbons/ naphthalene, toluene, long-chain perfluoroalkyl acids (LCPFAAs), nonylphenol (NP), nonylphenol ethoxylates (NPEOs), phthalates and short-chain chlorinated paraffins

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ZDHC tools

- **Chemical Management Systems (CMS) Guidance Manual (from 2015)**

Approach, structure and documentation needed

Structured in five sections: commitment to CMS (plan phase), assessment, planning and prioritisation (plan phase), chemicals management (do phase), monitoring (check phase) and management review (act phase)
- **Right to Know Disclosure Methodology Research (2014)**, ZDHC team research results on chemical compliance and disclosure methodologies
- **ZDHC Academy** = ZDHC certified training

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METHODOLOGIES AND TOOLS FOR CHEMICALS MANAGEMENT OEKO-TEX® PRODUCTS

Methodologies and Tools for Chemicals Management STANDARD 100 (appendix 6) by OEKO-TEX®



- STANDARD 100 by OEKO-TEX®

Textile products (raw, semi-finished, and finished and accessories) certification system - human ecology (annex 4)

Tested for harmful substances, legally banned and controlled substances, chemicals known to be harmful to the health (but not yet legally controlled) and parameters for health protection.

- **Appendix 6 of STANDARD 100 by OEKO-TEX®**

Specially developed for companies focused in Detox campaign.

Limits considering special environmental friendly production conditions, therefore the limit values are stricter (than in appendix 4)

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DETOX TO ZERO by OEKO-TEX®



- **DETOX TO ZERO by OEKO-TEX®**

Verification and reporting system of requirements requested by the Detox campaign of Greenpeace.

Service is focused on:

- establishment of a transparent chemical management system
- continuous improvement plan to reduce hazardous substances in the production process, e.g. comprehensive MRSL examination
- wastewater and sludge measurements
- improvement of protective measures for the protection of the environment

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DETOX TO ZERO by OEKO-TEX®

- **DETOX TO ZERO by OEKO-TEX®** includes:

Elimination:

Eliminating all release of toxic chemicals and recognising that there are no environmentally safe levels for hazardous substances (Greenpeace's priority list of 11 chemical groups).

Prevention and precaution:

Review, analysis and measures for continuous improvement regarding preventive measures for hazardous substances handling and the use

Right to know:

Documentation of the company's operations including training, environmental reporting, internal and external communications. Publicly available register on the OEKO-TEX website.

Incremental elements (beside requirements of the Detox campaign):

resource efficiency, health protection, environmental protection and prevention of water pollution, and occupational safety.

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DETOX TO ZERO by OEKO-TEX®

DETOX TO ZERO by OEKO-TEX® procedure

Contact

- Online-application or
- contact an OEKO-TEX® institute

Online questionnaire

- User accesses DETOX assessment tool – information about:
- Chemical Management System
- Inventory of chemicals used
- wastewater and sludge characterization

Audit

- On-site visit from an OEKO-TEX® specialist to verify the stated company data and process information

Report

- Status report including improvements and compliance level
- Report is valid for one year.
- Renewal can be applied for up to three months before the end of the validity period

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METHODOLOGIES AND TOOLS FOR CHEMICALS MANAGEMENT GM SUB

Methodologies and Tools for Chemicals Management

GM SUB tool

- **GM SUB** is a software tool for the management of chemicals
 - Developed by CITEVE and MACWIN company.
- The information managed in GM SUB is based on chemicals used in a company, considering :
 - Chemicals SDS (safety data sheet)
 - Places where chemicals are used
 - Legislation
 - chemical incompatibilities

- **GM SUB** automatically creates communication documents



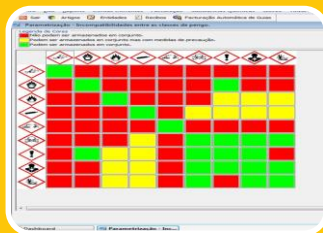
Safety data sheet

- on paper or in digital format
- complete version or a summary of the most relevant information
- to be available in the places where chemicals are stored or used



Labels

- For original recipient when losses the label
- For new recipients, when collecting samples for laboratory use



Awareness posters, like

- storage incompatibility
- Safety alerts
- Good practice for handling and storing chemical substances

Methodologies and Tools for Chemicals Management

GM SUB tool

- GM SUB permits also:
- **Search specific substances** and/or mixtures used in the company (indicating the workplaces where they are used), based on:

CAS Number,

EC Number

REACH number,

Hazard classes

R, S, H, P phrases

The screenshot displays the GM SUB software interface. The left sidebar shows a navigation tree with categories like 'Produtos Químicos', 'Frases', 'Equipamentos de Protecção', 'Funcionários', 'Postos de Trabalho', 'Medições', 'Incompatibilidades', 'Substâncias Químicas', 'Produtos Químicos', and 'Classes Perigo'. The main window is divided into several sections:

- Produtos Químicos:** A table with columns for 'Nome', '%%', 'Nº CAS', 'Nº CE', 'Nº Reg. REACH', 'Artigo', and 'Informação SVHC'. It lists 'Hidroxi-do cálcio', 'Hidroxi-do cálcio', and 'Hidroxi-do potássio'.
- Produtos Químicos:** A table with columns for 'Código', 'Descrição', 'ID Interno', 'Nº CAS', 'Nº CE', and 'Nº Reg. REACH'. It lists 'Soda Cáustica Sólida'.
- Frases:** A table with columns for 'Grupo', 'Código', and 'Descrição'.
- VLE:** A table with columns for 'Designação', 'Legislação', 'Valor', and 'Unidade'. It lists various VLE values for 'Nº NP 1796/2007', 'Nº CE', 'Nº NP 1796/2007', 'Nº NP 1796/2007', 'Nº DL 24/2012', and 'Nº DL 24/2012'.

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GM SUB tool

- GM SUB permits also:
- **Check for compatibility** between chemical substances used in a company, based on the hazard class and CAS number.
- Identification of **personal protective equipment**:
 - by chemical and/or by workplace
 - within a given workplace, when handling a specific chemical for each worker.
- **Access information** in accordance with the latest **SVHC** candidate list (Substances of Very High Concern):
 - A substance used in the company is on the list
 - New substance the company intend to use on the list



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Thank you!

Questions welcome



Project smedia