Benetton Group srl

RSL Screening Methodology

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Introduction

Benetton Group has a relevant experience on sustainable business practice and it firmly believes in a "clean factory approach". Among others, in 2013 Benetton partnered with Greenpeace's Detox program to lead the textile industry towards the complete elimination of hazardous chemicals from manufacturing (http://www.benettongroup.com/sustainability/detox/). Moreover, in the same years, as signatory brand, Benetton also joined the Zero Discharge of Hazardous Chemicals (ZDHC) Programme (http://www.roadmaptozero.com/).

Sustainability is the main concept on which Benetton's philosophy is based on: products have to be sustainable not only in terms of production processes, but they also have to be safe for consumers. For this reason Benetton Group is at the forefront of efforts to eliminate dangerous substances and guarantee the highest safety standards in products.

The Restricted Substances List (RSL) represents the main and the most important instrument to achieve the goal of having a "clean supply chain" and "clean products", with zero discharge of hazardous chemicals, by 2020. To minimize the impact on the environment and to ensure the highest product safety, Benetton fully adopts the ZDHC Manufacturing Restricted Substances List (MRSL) and defines its own Product RSL (PRSL).

Concerning chemicals and their impact on the environment, the main focus of Benetton Group is on the water effluents of facilities involved in wet processes that constitutes one of the most important stage in manufactured textile.

Benetton Group applies the "precautionary principle" (i.e., taking preventive action before waiting for conclusive scientific proof regarding cause and effect between the substance/activity and the damage)[1] across its global supply chain as it continues to make progress in the elimination of hazardous chemicals and screens for new chemicals.

In this document, the Benetton's hazardous chemical screening methodology is described.

[1] See BENETTON GROUP'S DETOX COMMITMENT (http://static.benettongroup.com/wp-content/uploads/2016/05/Benetton_Group_Detox_Commitment.pdf)

Benetton's RSL

Benetton's PRSL is intended to put into practice the environmental provisions included in the Code of Conduct. It sets out the minimum requirements related to the product safety for the end consumer, including the chemical and eco-toxicological parameters for the products purchased by Benetton Group.
By following the RSL, in fact, facilities can focus on specific actions to prevent and eliminate certain substances not only in the products but also in their processes.
The RSL clearly restricts and monitors the use of the 11 initial priority groups defined in the Detox Programme and other additional substances.

Screening Methodology

The Benetton's PRSL is constituted by a list of various substances groups, with their respective bans/restriction, and it must be complied by all facilities at any step of the Benetton's supply chain.

The PRSL is compiled based on a 3 main steps process:

- Chemical Database definition
- Chemical Inventory definition
- RSL definition

Chemical Database: together with the recognized chemical substances, it includes a wide range of publicly available technical information such as countries' regulations and supranational entities, as for example the European Chemical Agency (ECHA)[2], and other official listings of industrial chemicals (e.g., Chem Portal[3] , KEMI Prio[4] and others). In particular, the general chemical substance regulations that are continuously consulted are:

- **REACH** (Registration, Evaluation, Authorization and Restriction of Chemicals): Regulation **EC/1907/2006**
  It establishes a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance). The regulation details the evaluation process, the authorization and the restriction process of substances.

- **CLP** (Classification, Labelling and Packaging of substances and mixture Regulation): Regulation **EC/1272/2008**
  It harmonizes the criteria for classification of substances and mixtures, and the rules on labelling and packaging for hazardous substances and mixtures to align the European Union system of classification, labelling and packaging of chemical substances and mixtures to the Globally Harmonized System (GHS), that is the set of the classification criteria and labelling rules agreed at the UN level. It also aims at establishing a classification and labelling inventory of substances.

[2] https://echa.europa.eu/it
[3] www.organic-chemistry.org
[4] http://www.kemi.se/en/prio-start

- **POP** (Persistent Organic Pollutants): Regulation **EC/850/2004**
  It creates a legal framework to protect human health and the environment by prohibiting, phasing out as soon as possible or restricting the production, placing on the market and use of POPs (Persistent Organic Pollutants). It also lays down rules for dealing with stockpiles and waste containing POPs.

- **EU Biocides Regulation**: Regulation **EU/528/2012**
  It concerns the placing on the market and use of biocidal products, which are 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.

- **Toy Safety Directive**: **EC/48/2009**
  The EC/48/2009 lays down rules on the safety of toys, i.e. products designed or intended, whether or not exclusively, for use in play by children under 14 years of age.

- **OEKO-TEX** certification
  It is an independent testing and certification system for textile products from all stages of production along the whole value chain.

- **EU Ecolabel** Directive for textiles: **EU/350/2014**
  It promotes the production and consumption of products with a reduced environmental impact along the life cycle and is awarded only to the best (environmental) performing products in the market.

- UNI Safety management of textiles, clothing, furniture, footwear, leather and accessories: **UNI/TR 11359/2010**
  It describes in detail hazardous chemical potentially present in textiles and their respective risks, by indicating the acceptability limits basing on the use categories (children, contact with skin, no contact with skin).

- Textiles and textile products - Guidance on health and environmental issues related to chemical content of textile products intended for clothing, interior textiles and upholstery: **CEN/TR 16741/2014**
  It specifies environmental and health recommendations for textile products (including accessories) with direct skin contact and in the surroundings of the human body. It is a technical report that facilitates the understanding of chemicals with intended uses in the manufacturing of goods in the fields of textile products intended to clothing, interior textiles and upholstery, to comply with the European chemical regulations and recommendations in force in EU.

- Footwear - Critical Substances Potentially Present In Footwear And Footwear Components: **CEN ISO/TR 16178-2012**
  It establishes a list of critical chemical substances potentially present in footwear and footwear components, their potential risks, the materials in which they could be found and which test method(s) can be used to quantify them.

- **Food Contact Materials (FCM)** Regulation **EC/1935/2004**
  It lays down a general safety requirement aimed at ensuring that the substances migrating from the material into the food do not endanger human health or change the food itself.

- Greenpeace's Eleven hazardous chemicals (**11 Detox Chemical Groups**)
  They represent the priority list of hazardous chemicals that brands in the textile industry have to eliminate in the supply chain by 2020.

- **GOTS**, Global Organic Textile Standard (http://www.global-standard.org/the-standard.html)
  It is the world's leading processing standard for textiles made from organic fibers. It defines high-level environmental criteria along the entire organic textiles supply chain and it also requires compliance with social criteria.

- **ZDHC Manufacturing Restricted Substances List** (https://www.roadmaptozero.com)
  It is a list of chemical substances banned from intentional use in facilities that process textile materials and trim parts in apparel and footwear. It also establishes acceptable concentration limits for substances in chemical formulations used within manufacturing facilities.

- **ZDHC Wastewater Guideline** (https://www.roadmaptozero.com)
  It is a harmonized set of wastewater parameters (i.e., conventional parameters and original priority chemical groups included in the ZDHC MRSL), limit values and test methods, to ensure brands and suppliers are working to the same set of expectations.

Chemical Inventory: it is the result of the previous step and it is constituted by two list, namely the *Preliminary List* and the *Alert List*. In particular, the Chemical Inventory is defined by evaluating all substances basing on their hazardous level, according to the classifications reported by REACH (https://echa.europa.eu/it/regulations/reach/), CLP (https://echa.europa.eu/it/regulations/clp/), GreenScreen® List Translator™ (http://www.greenscreenchemicals.org/learn/greenscreen-list-translator).

1. Preliminary List: it contains all substances, including the hazardous or potentially hazardous ones, resulting from the revision of the regulations grouped in the Chemical Database. In particular, they are all substances that are classified in any of the hazardous categories listed in the regulations and they constitute the candidates substances to be included in the Benetton's RSL.

2. Alert List: it includes all the substances that are not yet regulated and that, therefore, need further investigations.

RSL Definition: This, in turn, is based on three steps:

1. RSL Substances' list: in this step all substances in the Preliminary List are evaluated depending on their use and/or regulation in the textile industry. If they are neither used nor regulated in textile industry, their use in growing and/or feeding is evaluated since they could have affected both animal and vegetal fibers. All other substances that do not belong to these "categories" are momentarily not considered and left for future investigations.

2. Limits definition: in this step limits are defined.
   2.1. Detection Limits: information given by laboratories concerning instruments' detection limits to minimize the presence of any regulated (hazardous) substance. It is settled on the minimum detection limit that even one of the selected laboratories can guarantee in all its sites all over the world.
   2.2. Limit Value and Methods: information resulting from the Chemical Database are compared each other. When they are regulated, the most restrictive limit is chosen with the related methods; on the contrary, when a fixed limits do not exist, they are defined on experience on testing

results. Methods are carefully screened selecting those that ensure the stronger guarantees. Basing on improved results, both limits and methods are yearly reduced and revised respectively.

2.3. USAGE BAN: this refers to substances that must not be intentionally used, due to their hazardousness, at every stage of production. Even if they are banned, in some cases a tolerability of them is granted since residual traces could be present caused by inevitable impurities in the input.

RSL Publication: After the limits' definition for each substance/group of substances, the PRSL can be officially published by listing all substances, grouped by family, with respective limits, methods and bans.

The whole process for the RSL definition is described by the flow chart reported here below.

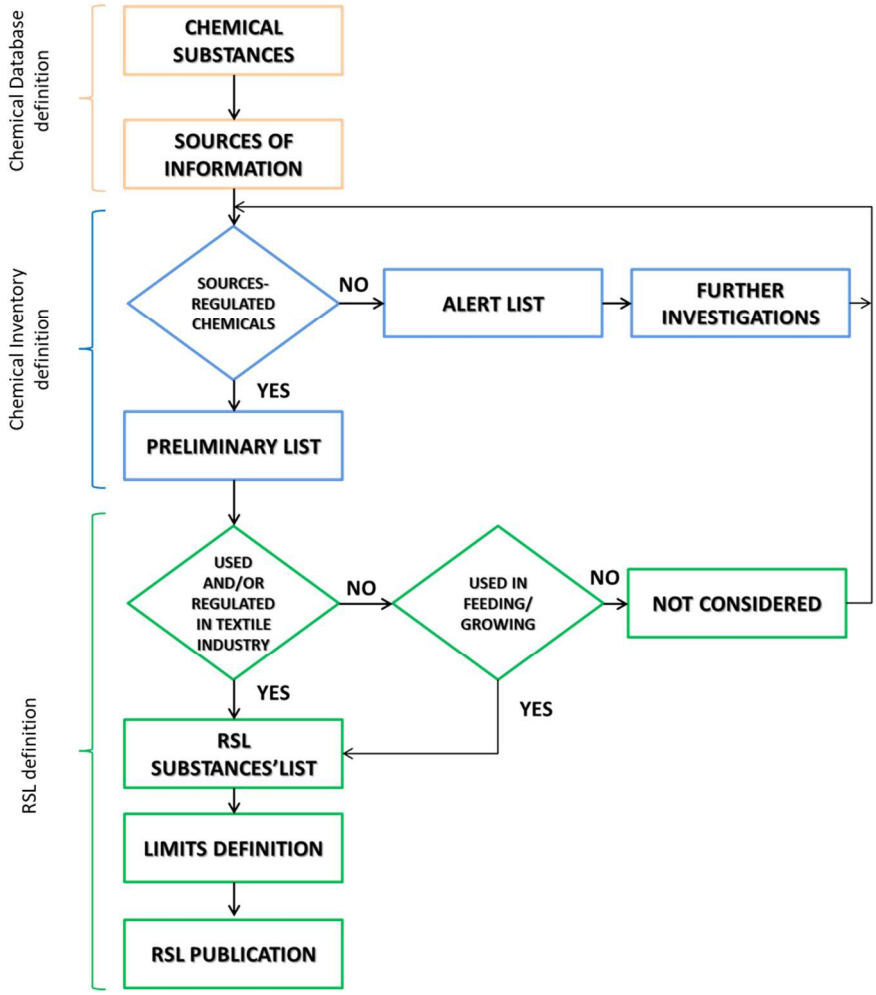

Figure 1 Flow chart to define the Benetton's RSL.

RSL updating

Benetton Group is continuously monitoring all public sources where chemicals are listed to keep updated its database, whenever there is a change or a new published information, to ensure the most up-to-date version. In particular, Benetton annually updates the RSL and it makes available its detailed reports on its web page (http://www.benettongroup.com/sustainability/detox/).

In particular, since the used method to define the RSL is based on a multi-criteria analysis, that is a very versatile technique, periodic checks of changes (and updating when necessary) in the classification of compounds are made by Benetton Group. This means that there is a continuous monitoring of the screening procedure within the Group.
Moreover, Benetton Group, encourage its suppliers and sub-suppliers to transparency, by inviting them to disclose their DETOX analysis results on the IPE (Institute of Public & Environmental Affairs) platform (http://wwwen.ipe.org.cn/) and in the ZDHC Gateway (http://gateway.roadmaptozero.com/).