Revision of EU Ecolabel criteria for Footwear

Technical Report
Third Version

October, 2014

Prepared by

Author(s): *Malgorzata Kowalska, Renata Kaps, Oliver Wolf*

JRC EUROPEAN COMMISSION

ipts Institute for Prospective Technological Studies

CONTENTS

Acronyms

ABS	Acrylonitrile Butadiene Styrene
ADEME	French Environment and Energy Management Agency
AFIRM	Apparel & Footwear International RSL Management Group
AFNOR	French Association of Normalisation
BAT	Best Available Techniques
BCI	Better Cotton Initiative
BIIR/CIIR	Halogenated Isobutylene Isoprene Rubber/Chlorinated
BR	Butadiene Rubber
BREF	Best Available Techniques Reference Document
CB	Competent Body
CEN	European Committee for Standardization
CLP	Regulation No 1272/2008 on Classification, Labelling and Packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
COD	Chemical Oxygen Demand
COTANCE	Confederation of National Associations of Tanners and Dressers of the European Community
CSR	Corporate Social Responsibility
DEFRA	Department for Environment, Food and Rural Affairs
EC	European Commission
ECAT	EU Ecolabel Catalogue
ECHA	European Chemicals Agency
EEC	European Economic Community
EIA	Environmental Impact Assessment
ELCD	European reference Life Cycle Database
EPD	Environmental Product Declaration
EPDM	Ethylene Propylene Rubber
EU	European Union
EU27	27 Member States of the European Union, up to 2013
EU28	28 Member States of the European Union, from 2013
EUEB	European Union Ecolabelling Board
Eurostat	Statistical Office of the European Union Database
EVA	Ethylene Vinyl Acetate
GHS	Globally Harmonised System
GOTS	Global Organic Textile Standard
IED	Industrial Emissions Directive
ILCD	International Reference Life Cycle Data System

IPP	Integrated Product Policy
IPPC	European Integrated Pollution Prevention and Control
IPCC	Intergovernmental Panel on Climate Change
IPTS	Institute for Prospective Technological Studies
IR	Isoprene Rubber
ISO	International Organization for Standardization
IULTCS	International Union of Leather Technologists and Chemists Societies
JRC	Joint Research Centre
LCA	Life Cycle Analysis
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
LWG	Leather Working Group
PCR	Product Category Rules
PE	Polyethylene
PEF	Product Environmental Footprint
PEFCR	Product Environmental Footprint Category Rules
PFAS	Perfluorinated Alkylated Substances
PP	Polypropylene
PPE	Personal Protective Equipment
PTFE	Polytetrafluoroethylene
PU	Polyurethane
PVC	Polyvinyl chloride
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
RSL	Restricted Substance List
SBR	Styrene Butadiene Rubber
SBS	Styrene Butadiene Styrene
SCP	Sustainable Consumption and Production
SIP	Sustainable Industrial Policy
SVHC	Substances of Very High Concern
TC	Technical Committee
TPU	Thermoplastic Polyurethane
TR	Thermoplastic Rubber
VOC	Volatile Organic Compound

INTRODUCTION

The main objective of this project is to revise the EU Ecolabel criteria for Footwear with respect to the current definition set by the Commission Decision No 2009/563/EC. This document is intended to provide the background information for the revision of the EU Ecolabel criteria for Footwear. The related study has been carried out by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS) with technical support from RDC Environment.

The EU Ecolabel criteria are designed to promote the use of the most environmentally friendly products. Thus, the need for revision is mainly supported by the revised Regulation on the EU Ecolabel (No 66/2010) and the Commission Statement of 19 March 2009 (ENV G2).

The main purpose of this Technical Report is to evaluate the current criteria and discuss if they are still relevant or should be revised, restructured or withdrawn to address the most important environmental impacts from the Life Cycle Assessment perspective. For this reason, the document is augmented by the information analysed in the Preliminary Background Report for the revision of Ecolabel for the product group "Footwear", which provides the legislative, market, best practices, and technical analysis information to support the criteria proposals and revision. The Technical Report summarizes the main findings from the Preliminary Report and discusses all current criteria and how the environmental issues identified can be addressed through criteria revisions. New criteria areas also have been proposed according to the analysis performed in the Preliminary Background Report.

Stakeholder feedback were gathered within the consultation process including AHWG1, 8th October, 2013 in Seville, Spain. The follow up research and corresponding changes in criteria proposals are reflected in the document

For each criterion, a table indicating major changes proposed and direct comparison of the current and proposed criteria is provided. A discussion of the rationale for the proposed change (if applicable) to the criterion follows each table. For each criterion, questions that require consultation with the stakeholders are listed. Draft proposals for new criteria and the accompanying rationale are also presented. This Technical Report has been and will be updated during the criteria development process based on new information, stakeholder input or input from the working group meetings. The final Technical Report will incorporate the scientific arguments for the revised new criteria document.

Structure of the document

This chapter presents the typical structure how aspects of the Ecolabel and in particular criteria are treated in the document. It may be adapted accordingly to the situation (e.g. new proposals, no change…).

Major proposed changes: *A brief summary of the major proposed changes to the criterion are presented here.*

Present criterion, Decision 2009/563/EC
The text of the current criterion as published in the Commission Decision 2009/563/EC for the product group is provided here as a point of reference.
Suggested criterion for AHWG1, October 2013
Proposal presented duting AHWG1, 8th October, 2013 in Seville, Spain, is presented here
Suggested criterion for AHWG2, May 2014
Any proposed changes to the text of the current criterion are provided here marked in red and/or ~~struck out~~
Suggested criterion, November 2014
Proposed criterion is provided here for further consultation

AHWG technical discussion

Here the technical analysis and arguments put forward at the 1st AHWG to support proposals for criteria revisions are presented and discussed.

AHWG stakeholder feedback
Here a summary is provided of the feedback submitted by stakeholders at the AHWG and in written form.

Follow-up research

The main findings carried out subsequent to the AHWGs stakeholder feedback are summarised and discussed.

A summary of feedback received from stakeholders is briefly presented alongside the findings.

Proposals

Proposals for how the criteria are be further addressed are presented one by one for each technical issue.

1 BACKGROUND INFORMATION

1.1 General Remarks

The conclusions and recommendations included in the Preliminary Background Report establish the framework for the current revision process. The Preliminary Report first analysis all identified relevant sources of information, and then develops the main arguments to support the revised criteria proposal. Finally, it presents conclusions and preliminary recommendations. The Preliminary Report consists of four main chapters which indicate the procedure and methodology for the on-going revision of the EU Ecolabel criteria, including analysing the current legislative background, Commission Statement as to 2009, market situation, other European and non-European Ecolabels, identification of industry best-practices, the LCA analysis, and the feedback from questionnaires. More specifically, the Report is divided into following Tasks.

1. Task 1 provides a background for the revision process by:
    - Summarising the legal framework relevant to the product group under revision;
    - Addressing Commission Statements arising from the 2009 revision ;
    - Analysing product group definition and categorization;
    - Summarising other labels and initiatives from the scope extension perspective;
    - Analysing the scope of the criteria revision with the special focus on checking the feasibility of proposed product group extension to other leather products;
    - Summarising initial stakeholder questionnaire input regarding the scope revision;
2. Task 2 provides updated market analysis which includes:
    - Statistics describing the world and EU-27 market for footwear products;
    - Statistics describing the world and EU 27 market for leather and leather goods;
    - Product group market segmentation with analysis of the feasibility of product group extension;
    - Market status of the EU Ecolabel for footwear licenses;
    - Market status of other labels and initiatives;
    - Identification of key industry innovations categorized for each life cycle phase and brand;
3. Task 3 is a technical analysis that establishes the framework for the criteria proposal; it comprises the following elements:
    - Review of the LCA and LCA-related literature relevant to the product group under revision;
    - Performance of a specific LCA for footwear;
    - Analysis of possible use of harmful substances during the production process.
    - Analysis of possible presence of harmful substances in the final product;
4. Task 4 analyses the improvement potential based on Task 2 and Task 3 findings; it includes the following:
    - Whenever feasible, qualitative analysis of the improvement potential for key environmental issues and industry best practices;

- Discussion of how these issues could be addressed by the criteria revision, including information on the possible environmental savings and market diffusion;
- Identification of possible barriers and opportunities to reach the proposed criteria.

1.2 Proposed framework for criteria revision

Based on findings presented in the Preliminary Report seven areas of relevance will be addressed by the current revision process:

1. Commission Statement of 19 March 2009 (ENV G2) arising from the last product group revision and providing Member States statements relating to issues that should be addressed/investigated further in the next revision;
2. Update of best available techniques (BAT) consumption and emission levels: based on review of the corresponding BATs and technical evidence;
3. Addressing the main environmental 'Hot spots" of the footwear supply chain: based on a product LCA literature review and a specific LCA case study;
4. Product best practices present on the market: based on identified eco-innovation informed by manufacturers, retailers and brands;
5. Harmonization with so called "horizontal approach" according to EU Ecolabel Regulation (EC) 66/2010
6. Harmonisation with other existing ecolabels and initiatives, such as NGO and private label scheme criteria;
7. Possible synergies with the on-going criteria revision for the EU Ecolabel for the textile product group will also be considered.

In general, it is advisable to keep the overall structure of the criteria document However, some changes in criteria re-organization will be recommended and subjected to discussion with the stakeholders.

The main challenge is to improve the weight of the proposed criteria by ensuring that the environmental areas highlighted as 'hot spots'[1] receive sufficient analysis being compared with the industry best practices.

This effort has generated a number of criteria revisions and new criteria proposals. For other relevant issues not listed as 'hot spots', relevant criteria will be proposed based mainly on an industry averages and stakeholder input.

It is also important to consider harmonising the EU Ecolabel for footwear with other labels and schemes in order to reposition the EU Ecolabel within the market and to lower the administrative burden for both applicants and Competent Bodies, keeping in mind that harmonisation will have both pros and cons that must be addressed.

To improve feasibility of the application process, the readability of the Technical Report should be improved and options to further streamline and focus the assessment and verification elements should be evaluated. The new criteria dealing with hazardous substances may also provide a new way of thinking about the structure of the criterion – for example, highlighting criteria that relate to processes versus criteria that relate to the finished product.

[1] The life cycle phases where the biggest impacts of a product originate

Input materials criteria are an important focus. Here, an in-depth revision is necessary, especially for criteria pertaining to textiles and synthetic materials.

Regarding the chemical substances used, the criteria revision effort will focus on updating the criteria in relation to the REACH Regulation (EC) No 1907/2006, the requirement of the EU Ecolabel Regulation (EC) No 66/2010 and BREF documents[2], and to analyse the possibility of harmonising with other labels or schemes. Harmonisation is a significant consideration in relation to managing the administrative burden for Competent Bodies.

Several new areas for new criteria development have been proposed. They relate to environmental considerations or to market expectations and identified industry best practices. Some discussion has focussed on the possibility of developing straightforward criteria in these areas to promote improvement of the products and to ensure the ability of both applicants and Competent Bodies to verify compliance.

In order to vet these proposals, Questionnaire 1 presented in 0 was sent to stakeholders to gather feedback on[3]:

- The possibility to extending the scope to non-footwear leather products;
- The need for criteria revision (to change or remove them, or to add new ones);
- National market figures for footwear and leather products;
- Other relevant information (e.g., identification of main constrains to apply for the EU Ecolabel for footwear, current license holders, environmental innovations, information on hazardous substances).

Among the stakeholders consulted, 26 stakeholders answered the first questionnaire, of which:

- 9 are representatives of enterprises;
- 6 are representatives of industry associations;
- 6 are representatives of research centres;
- 1 represents a Non-Governmental Organization;
- 4 represent Competent Bodies.

1.3 Commission Statement as to the next Revision

In conjunction with adoption of the current criteria document on March 2009 (decision No 2009/563/EC), several statements were submitted by Member States relating to issues that should be addressed/investigated further in the next revision. Thus, the revision of the EU Ecolabel for Footwear must also address the following concerns raised by the Commission Statement (19 March 2009/ ENV G2):

- the use and environmental impact of all fluorinated substances (e.g., including PFAS) which might be used for the footwear (e.g., for impregnation) must be assessed in the revision;
- stricter limits on emissions should be based on the best value in BAT/BREF;

[2] For the Textiles Industry, for the Tanning of Hides and Skins, and for the Production of Polymers
[3]Questionnaire may be downloaded from the Product Bureau website: http://susproc.jrc.ec.europa.eu/footwear/whatsnew.html

- emissions related to synthetic materials, i.e., plastic/polymers, should be addressed;
- the waste phase of materials should be included in the evaluation;
- materials that are problematic in the waste phase should be regulated or excluded ;
- PFAs and the related environmental problems should be evaluated;
- PVC and the related environmental problems should be evaluated;
- formaldehyde in leather and the related environmental problems should be evaluated.

1.4 Key environmental issues identified

A number of key environmental issues have been identified through best-practices analysis and literature review. Quantitative assessment of footwear environmental impact from the life cycle perspective has been addressed and evaluated through a specific LCA case study followed by improvement potential analysis. The LCA was performed to a large extent based on stakeholder feedback received through a second questionnaire. The total number of replies was 13; 4 respondents did not provide any quantitative information on the production process, only a general indication on how the LCA should be performed. The questionnaire form could be accessed from the dedicated footwear Product Bureau website[4]: Table below details answers received for each life cycle stage.

Table 1: Questionnaire responses

Input materials	Manufacturing of footwear	Packaging and Distribution	End of life	Focus on leather production
6	4	4	1	4

As indicated in Table 2, the impacts are mostly due to the production of input materials, mainly influenced by the mass of the footwear (i.e., the quantity of input materials required) and the wastage rate. The manufacturing of footwear accounts for a significant share of overall impact and is generated mainly by the energy consumption and the emissions of VOC. Distribution has a lower impact on the overall results, mainly due to air transport.

The most sensitive parameters are the following (the most important first):

- Energy consumption (for manufacturing of uppers, soles, linings and assembly of footwear);
- Electricity mix (for manufacturing of uppers, soles, linings and assembly of footwear);
- Mass of footwear and choice of input materials;
- Wastage rate;
- Quantity of VOC emissions;
- Share of airplane for intercontinental transport;
- Incineration rate at end of life.

[4] http://susproc.jrc.ec.europa.eu/footwear/docs/Footwear_Questionnaire_II.xls

The impacts of agriculture, breeding and slaughtering may also be relevant for the life cycle of footwear, depending on the allocation rule chosen. Therefore, careful consideration should be given to whether leather is assumed to be considered as a co-product or by-product of meat and milk production.

Table 2: Highlighted hot spots from additional LCA

Life cycle stages		Environmental relevance[5]
Agriculture, breeding and slaughtering		- to +++
Production of input materials		+++
Manufacturing and assembling	Energy consumption	++
	VOC emissions	+
Transport by plane		+
End of life of footwear		-

- Durability of footwear is also a key parameter because of its ability to have a multiplier effect on the results.

- Based on the results of the LCA analysis performed and on the outcomes from the current LCA review, the following criteria areas should be addressed in the EU Ecolabel revision:
- Footwear should achieve a certain durability with regard to its resistance to mechanical degradation;
- Input materials should be carefully chosen, with a focus on the use of sustainable materials (e.g., recycled materials);
- The footwear mass should be reduced[6];
- For the leather production, hides and skins should come from the meat and milk industry in order to ensure that impacts of farming can be mostly attributed to meat and milk;
- The wastage should be minimised during material processing and footwear manufacturing;
- The energy consumption should be minimised for footwear manufacturing (including uppers, soles, and linings manufacturing, and footwear assembly);
- The VOC emissions should be minimised during footwear manufacturing.

[5] +++: highly significant on LCA results; ++: very significant on LCA results; +: quite significant on LCA results; -: not significant on LCA results.
[6] This criterion must not be reached at the expense of durability of footwear

1.5 Current criteria

The framework of the EU Ecolabel document under revision presents the criteria objectives and defines the background for the assessment and verification requirements (e.g., functional unit, cut-off limit). The objectives of the criteria are described as being:
"limiting the levels of toxic residues, the emission of volatile organic compounds and promoting a more durable product."

The criteria document under revision consists of ten criterion designed to meet this stated purpose by addressing the following environmental issues:

1. Dangerous substances in the final product;
2. Reduction of water consumption;
3. Emission from the material's production (limitation of water pollution);
4. Exclusion of use hazardous substances (up until purchase);
5. Use of VOCs during final assembly of shoes;
6. Energy consumption;
7. Use of recycled material for packaging;
8. Information on the packaging;
9. Information appearing on the Ecolabel;
10. Parameters contributing to durability.

Table 3 compares the current and proposed set of criteria to be addressed.

.

1.6 Rearrangement of criteria after the feedback from AHWG Meetings

Change in the criteria numbering order is recommended following introduction of new proposals, and being adapted to the life cycle stages of the footwear manufacturing supply chain as indicated in Table 4. The order of criteria presentation within the document is aligned with the proposal set in the below Table.

All in all, three new criteria are proposed to be integrated under the revised EU Ecolabel criteria for Footwear, namely: Material origin, Energy and waste management during footwear assembly, and Social Requirements.

Table 4: Rearrangement of criteria

Life cycle phase	Current criteria		Criteria proposal		Status
Origin of raw materials			1	Materials origin	New
Processes	2	Reduction of water consumption	2	Reduction of water consumption	Revised
	3	Emission from the material production (limitation of water pollution)	3	Emissions from the production of materials	Revised
	5	Use of VOCs during final assembly of shoes	4	Volatile Organic Compounds (VOCs)	Revised
	6	Energy consumption	~~5~~	~~Energy consumption~~	~~No change~~
Use of chemical substances and Presence of chemical substances	1	Dangerous substances in the final product	6	Hazardous substances present in the final product	Revised
	4	Exclusion of hazardous substances	7	Restricted Substances List	
Durability	10	Parameters contributing to durability	8	Parameters contributing to durability	Revised
Resource management/ Waste phase			9.	Energy and waste management during footwear assembly	New
Social Requirements			10	Social Requirements	New
Packaging	7	Use of recycled material for packaging	11.	Packaging	Revised
Use phase	8	Information on the packaging	12.	Information on the packaging	Revised
	9	Information appearing on the Ecolabel	13.	Information appearing on the Ecolabel	Revised

1.7 Main outputs after the AHWG1

In general, stakeholders approved the preliminary proposals of criteria revision.
The scope of the product group was agreed to remain as Footwear. Stakeholders supported the inclusion of the footwear classified as Personal Protective Equipment[7] in the scope.
Based on the stakeholders feedback and being supported by additional findings, the following preliminary criteria proposals are suggested to be withdrawn from the framework of the on-going revision.

- Use of recycled materials, because of the very low market penetration
- Use of PVC, by lack of scientific evidence.

The rationales behind are specifically analysed in the further stage of the document.

For the criterion related to the hazardous substances it was proposed to focus on substances specific to the footwear product group. The synergy with other EU Ecolabel product groups and in particular EU Ecolabel for textiles was in general welcomed by stakeholders.

Seeking the consensus and support of stakeholders, including Member States, industry and NGOs representatives, and with reference to the findings of the EU Ecolabel's Chemical Horizontal Task Force, an approach to criteria development was proposed consisting (in summary) of:

- Characterisation of the main materials, parts and components relevant to product group Footwear;
- Screening of functional additives, coatings and treatments applied to materials or components for their potential hazards and/or exposure risk along the products lifecycle. Process residues and contaminants of concern are also addressed;
- Identification of the main parts of the product in which hazardous substance substitution and/or restrictions have been implemented by manufacturers in mainstream products;
- Identification of relevant Candidate List and Article 57 substances by reference to European Commission initiatives, and Member State intentions;
- References to industry Restricted Substances Lists, Ecolabel types I of relevance to the product group Footwear have also been analysed.

[7] In accordance with Directive on Personal Protective Equipment (PPE) 89/686/EEC

1.8 Main outputs after the AHWG2

The main outputs form the 2nd AHWG Meeting could be summarized as follows:

1. The user manual was referred to as the most appropriate approach to specify in detail and clarify the verification procedure. The criteria document should be written in standard legal form, whereas the user manual could be referred to for the further clarification or explanation.

2. The revision is intended to look for the harmonization with EU Ecolabel criteria established for different product groups of possible reference (thorough comparison was done with EU Ecolabel for textile).[8]

3. The existence of international standards was assumed as necessary for the cross-laboratory data comparison. The requirement should be withdrawn when no agreed testing method is available and/or the verification procedure would considerably increase the application cost. The criteria proposed shall be implemented in an economical and verifiable manner.

4. Criteria should reflect identified hotspots areas.

5. The request for equality in requirements for different materials was raised.

6. It was indicated that substances banned by REACH Regulation do not need to be explicitely excluded, as they shall anyway not be present in the product. The only situation in which this requirement exclusion is justified is the production outsourcing.

7. As to the current revision process it was proposed to implement the social criterion only at the footwear assembly stage.

[8] OJ L 174, 13.6.2014, p. 45–83

2 REVISION OF EU ECOLABEL FOR FOOTWEAR CRITERIA

2.1 Product Group Name, Scope and Definitions

Main proposed changes

Introduction of the specific definitions developed in order to support and provide comprehensive criteria requirements.

Present scope, Decision 2009/563/EC
The product group 'footwear' shall comprise all articles of clothing designed to protect or cover the foot, with a fixed outer sole which comes into contact with the ground. Footwear shall not contain any electric or electronic components.
Suggested scope (1st AHWG), October 2013
Recommended scope: The product group 'footwear' shall comprise all articles of clothing designed to protect or cover the foot, with ~~fixed~~ applied sole which comes into contact with the ground. Footwear shall not contain any electric or electronic components.
Suggested scope (2nd AHWG), May 2014
(1) The product group 'footwear' shall comprise all articles of clothing designed to protect or cover the foot, with applied sole which comes into contact with the ground. Protective footwear classified under Directive 89/686/EEC[9] is included in the scope. (2) The following products are not covered by these criteria: (a) Footwear that contains any electric or electronic components.; (b) Products that are intended to be disposed of after a single use; (c) Socks with applied sole (d) Toy footwear For the purpose of this Decision, the following definitions shall apply: (1) Shoe upper refers the upper structural element, composed of one or more materials, which is attached to the outer sole. For the purpose of this Decision shoe upper includes lining and sock that constitute the inside of the footwear article. (2) Shoe sole, including midsole, refers to the bottom part of the footwear article which is attached to the upper. The outsole is the footwear part that contacts the ground and includes elements like tap, rand, heel, top pieces, cushioning elements and circles. (3) Skin contact refers to the entire construction of shoe uppers with the exclusion of external decoration.
Proposed scope November 2014
(1) The product group 'footwear' shall comprise all articles of clothing designed to protect or cover the foot, with applied sole which comes into contact with the ground. Protective footwear as defined under Directive 89/686/EEC[10] is included in the scope. (2) Footwear might be composed of various natural and/or synthetic materials in line with

[9] OJ L 399, 30.12.1989, p. 18
[10] OJ L 399, 30.12.1989, p. 18

Directive 94/11/EC.[11]

(3) The following products are not covered by these criteria:

(a) Footwear that contains any electric or electronic components;
(b) Products that are disposed of after a single use;
(c) Socks with applied sole;
(d) Toy footwear.

For the purpose of this Decision, the following definitions shall apply:

(1) "shoe upper" means the upper structural element, composed of one or more materials, which is attached to the outer sole. Shoe upper includes lining and socks;

(2) "lining and socks" mean the lining of the shoe upper, constituting the inside of the footwear article;

(3) "shoe sole" means the bottom part of the footwear article which is attached to the shoe upper;

(4) "footwear assembly" means a series of operations that aim at joining together shoe upper and sole elements to form final product. Final product packaging is included;

(5) "footwear assembly site'' means the site where the final stages of the production (from material cutting or forming (for injection moulding production) to product packaging) that pertain to the licensed product and remain under management control of the applicant take place;

(6) Volatile Organic Compounds as defined in EN 14602[12];

(7) "eliminable substance" means a substance that shows 80 % degradation of dissolved organic carbon within 28 days using one of the following test methods: OECD 303A/B, ISO 11733;

(8) "inherently biodegradable substance" means a substance that shows 70 % degradation of dissolved organic carbon within 28 days or 60 % of theoretical maximum oxygen depletion or carbon dioxide generation within 28 days using one of the following test methods: ISO 14593, OECD 302 A, ISO 9887, OECD 302 B, ISO 9888, OECD 302 C;

(9) "readily biodegradable substance" means a substance that shows 70 % degradation of dissolved organic carbon within 28 days or 60 % of theoretical maximum oxygen depletion or carbon dioxide generation within 28 days using one of the following test methods: OECD 301 A, ISO 7827, OECD 301 B, ISO 9439, OECD 301 C, OECD 301 D, ISO 10708, OECD 301 E, OECD 301 F, ISO 9408.

[11] OJ L 100 of 19.04.1994
[12] EN 14602: Footwear - Test methods for the assessment of ecological criteria

AHWG1 technical discussion

Scope extension

The proposal to enlarge the product group scope to other leather goods has been analysed extensively as reflected in Task 1 of the Preliminary Report. It has then been preliminarily proposed that the possible product group extension could encompass articles of clothing or accessory:

- Either designed to protect or cover the foot with a sole which comes into contact with the ground,

- Or made principally of leather and designed as a decorative or functional accessory, such as belts, bags, gloves, and other articles normally carried in the pocket.

The general output of the thorough technical analysis indicates that the product group extension is not recommended. Considering that leather has been chosen as a common characteristic and basis for the proposed scope extension, it is then necessary that leather is the main material used for assembly of the products. After considering the market situation, the other European and non-European Ecolabels, the industry consultation, the existing LCA studies, and the feedback received from the EUEB and registered stakeholders, it could be concluded that scope expansion is not recommended , bearing in mind that:

1. The EU Ecolabel should define one product group that is clearly understood by the consumers. Leather-made products cover a broad range of different functions (from car upholstery, to fashion jackets and wallets), hindering the introduction of the comprehensive product group definition. As the EU Ecolabel Regulation No 66/2010 defines it, a product group means "a set of products that serve similar purposes and are similar in terms of use, or have similar functional properties, and are similar in terms of consumer perception";

2. More than half the stakeholders (~57 %) who responded to the question are clearly not in favour of the scope extension (Figure 1). In general terms, stakeholders who supported the scope extension expressed their interest to cover more leather products within the EU Ecolabel in order to promote a greener market. Simultaneously, they suggested the need for fair requirements between all leather goods. Some stakeholders, because of several constraints, do not clearly express their interest in covering footwear and other leather products within one common scope. However, they would be interested in other leather products being covered by EU Ecolabel scheme. In practice, specific sets of criteria for other leather products (or leather) could be developed instead of including them in one unique product group 'Footwear and leather products';

3. Many of the so-called leather products are in fact composed of several materials, among which leather may be a minor component. Indeed, in certain product groups analysed, there is considerable increase in the use of leather/synthetic material combinations. It appears that, except for belts, leather is not the major constituent of the final product. Belts contain about 70 %[13] leather. Thus, there is a potential risk that if the wide range of articles apparently relevant to leather were covered by the scope, it would then include products that are not predominantly composed of leather (or only contain a minor quantity of it). Consequently, if all the leather products were to be considered within the scope, the majority would not meet the basic requirement: to be composed of leather. Thus, it would be necessary to introduce a restriction that imposes a minimum leather content requirement. However, in this case some products, including footwear, could be considered out of the scope because they are not mainly made of leather. In terms of volume and European apparent consumption, footwear with leather uppers accounted for 24 % of the footwear market (61% in terms of production volume) in 2011. This could mislead the consumer who looks for the most environmentally friendly choice within the same product group category.

[13] (CBI, 2010)

4. When referring to the leather market share, preliminary assessment indicates that extending the scope to other leather goods would not necessarily mean considerable environmental savings, as footwear is the main leather-made product group. The leather-made goods that by way of similarities could be covered by the scope represent a small market share. Considering segmentation of all leather-made products (therefore, including upholstery leather for car and furniture), from the global perspective footwear represents 52 % of the intended leather destination; other leather products of possible interests (belts, bags) correspond to as little as 9.4% of global market share (13.8% if gloves are included)14. On the European level, footwear represents 41% of the main end use of leather produced. According to COTANCE, the broad category of leather goods represent up to 20% of Europe's leather production,15 however, the high level of data aggregation precludes identifying the specificity of products included in this category.

5. The leather production-consumption chain consists of three main stages: hides and skins recovery as a by-product of meat industry: leather tanning and finishing; and final product assembly. The leather raw material is characterised by its heterogeneous nature, especially considering that hides and skins can be procured from a variety of animals which creates different types of raw material designated for production of a broad range of end-products. These differences are further amplified by the existence of numerous intermediate processing stages, thus, the type of leather produced will depend on the requirements of the ultimate user as well as the type of raw material utilized.[16] From a technological and processing perspective, leather used in footwear is the most diversified. Nevertheless, even if environmental requirements that refer to the tanning process are quite similar amongst leather products, the technical and performance requirements are product specific, considering that the production process and the origin of the hides or skins will differ depending on the type of leather that the tanner is asked to make. Ensuring the product functional durability within the use phase is quite different from one product to another, hindering the possible introduction of a common set of criteria. It should be stressed that leather used in footwear manufacturing is the most diversified and fulfils the strictest and very product-specific technical requirements.

6. If the scope were extended, all the criteria that are product-specific would then have to be identified for each category of goods covered by the analysis. This especially pertains to criteria related to the durability, use-phase, packaging, and end-of-life, among others. Otherwise, the common fitness for use criteria could exclusively cover the general technical requirement of material durability, but not final product. The EU Ecolabel Regulation No 66/2010 requires that "the EU Ecolabel criteria shall include requirements intended to ensure that the products bearing the EU Ecolabel function adequately in accordance with their intended use".

7. The ISO 14040:2006 and ISO 14044:2006 standard referred as LCA framework clearly state that environmental comparisons between systems shall be made on the basis of the same function(s), quantified by the same functional unit(s); therefore, it is not possible to compare articles of unrelated utility (e.g., a wallet versus a piece of furniture). The EU Ecolabel Regulation mentions that the criteria "should be market oriented and limited to the most significant environmental impacts of products during their whole life cycle." In other words, scope definition should cover products of the same category and with the same identified environmental hot spots.

[14] (International Council of Tanners, 2008)
[15] (COTANCE, 2012)
[16] Salazar de Buckle, T. (2001) The Leather Global Value Chain - A Review - Report presented to UNIDO. Vienna

8. Other existing European and non-European ecolabels did not manage to develop a single common set of criteria pertaining to the product category that includes leather and non-leather footwear and leather products.

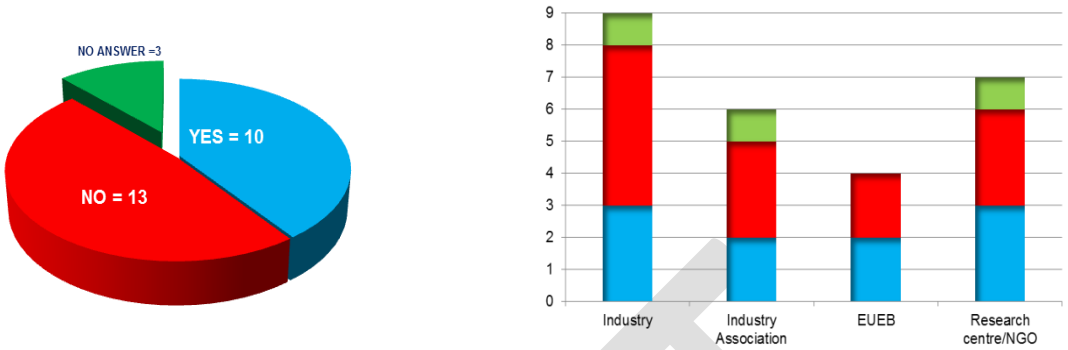

Figure 1: Stakeholders' feedback on the scope extension

Footwear moulded in one piece

In the injection moulding technique, the sole is directly moulded adhesive-free onto the shoe upper part. The sole material is injected in a mould and forms a strong bond with the shoe upper while it cools17. According to one stakeholder, the current definition of the scope recalling "a fixed outer sole" indicates that footwear moulded in one piece (such as Wellington boots) might not to be covered by the current scope because, technically, the sole has not been fixed to the upper. There is no rationale argument that could support such exclusion. It is more a misinterpretation of the definition. For the purposes of the Directive 94/11/EC, also called EU Footwear Labelling Directive, 'footwear' shall mean all articles with applied soles designed to protect or cover the foot. Therefore, it is proposed to delete the word "fixed" from the definition, introducing the word "applied".

Safety Footwear

From the legal perspective, safety footwear are not covered by the EU footwear Labelling Directive No 94/11/EC, because they fall under the scope of Directive on Personal Protective Equipment (PPE) 89/686/EEC which harmonises products to ensure a high level of protection for citizens throughout Europe. Those products have to meet the following requirements: to ensure the user's safety and health in specific circumstances. The manufacturer must inform the user about the type of hazards against which his product protects and the product must have the EC mark of conformity (e.g., the outer-soles for footwear designed to prevent from slipping must be so designed, manufactured or equipped with added elements, to ensure satisfactory adhesion by grip and friction having regard to the nature or state of the surface).

By similarity to generic footwear, light industrial shoes are proposed to be included in the scope under revision.

In general terms, the recommendation is to include in the scope all kinds of footwear that fall under footwear Directive 94/11/EC, plus occupational footwear (light industrial shoes). However, whether footwear incorporating special protective elements, such as metal toe-caps, shall be included in the scope should be discussed.

[17] Manufacture of shoe. SYNOPSIS Sheet. Prepared in the framework of EGTEI

Here we present a summary of feedback received at the first Ad-hoc Working Group Meeting in Sevilla on the 8th of 2013, together with follow-up research and the resulting proposals for further revision of the proposed criteria

AHWG1 stakeholder feedback

General scope

The arguments not to extend the scope were perceived by some participants as not sufficient, supporting the possible product group extension, mainly not to target narrow product group. Other ecolabel schemes that cover leather goods by textile/leather criteria were mentioned by stakeholders.

Other stakeholders stated that scope extension might require building up the new product group that are not covered by the current evidence base. The written feedback clearly supported the JRC recommendation not to extend the scope to other leather goods but rather concentrate on different kind of footwear.

Injection moulding footwear

Clear inclusion of injection moulding footwear in the scope has been supported by stakeholders.

PPE

The presence of EU Ecolabel license holder that produce PPE shoe with integrated steel toe caps has been raised. It was commonly accepted to include category I and II PPE footwear. The special relevance was given to the fact that PPE are produced in long term series. All PPE Categories were proposed to be included. In addition, testing according to CE market has been considered as straightforward with the possible parrarel development of EU Ecolabel criteria. The importance of GPP criteria inclusion has been raised in order to strengthen the product group as protective footwear is frequently purchased item under GPP.

Definitions

Several stakeholders asked for clear definition of the main materials used during footwear assembly. Detail specification of different kind of leathers used was also proposed. Theneed to introduce definition of "skin contact" was also discussed.

Follow-up research

Additional verification of previously analysed findings was conducted. 20th November 2013 JRC-IPTS confirmed to the EU Ecolabel Board the recommendation not to extend the scope of the product group to leather goods. The recommendation met the agreement of the EUEB, meaning that the scope remains as "footwear".

The materials definitions were taken from different standards, as suggested by stakeholders, the following table includes the specific definitions of the main materials of possible used for footwear manufacturing:

Table 5: Materials definition

Material	Definition	Source
Leather	Hide or skin with its original fibrous structure more or less intact, tanned to be imputrescible, where the hair or wool may or may not have been removed, whether or not the hide or skin has been split into layers or segmented either before or after tanning and where any surface coating or surface layer, however applied, is not	ISO EN 15987

Material	Definition	Source
	thicker than 0,15 mm.	
Coated leather	Leather where the surface coating applied to the leather does not exceed one third of the total thickness of the product, but is in excess of 0.15 mm	ISO EN 15987
Leather fibre board	Term for material where tanned hides or skins are disintegrated mechanically and/or chemically into fibrous particles, small pieces or powders and then, with or without the combination of chemical binding agent, are made into sheets. The minimum amount of 50 % in weight of dry leather is needed to use the term leather fibre board.	ISO EN 15987
Vegetable-tanned leather	Hide or skin converted to leather by vegetable tanning agents, where the total content of tanning metals (Cr, Al, Ti, Zr, Fe) is less than or equal to 0,3 % (mass of all metals/total dry weight of leather)	ISO EN 15987
Chrome-free leather	The leather must contain less than 0.1% Cr on dry weight of leather.	ISO EN 15987:
Textile	Any raw, semi-worked, worked, semi-manufactured, manufactured, semi-made-up or made-up products which are exclusively composed of textile fibres, regardless of the mixing or assembly process employed, as covered by the Directive 71/307/EEC. The list of textile fibres can be consulted in Annex I of Directive 71/307/EEC.	Directive 71/307/EEC
Plastic	Polymer to which additives or other substances may have been added, which is capable of functioning as a main structural component of final materials and articles.	Regulation (EU) No10/2011
Polymer	Any macromolecular substance obtained by: (a) a polymerisation process such as polyaddition or polycondensation, or by any other similar process of monomers and other starting substances; or (b) chemical modification of natural or synthetic macromolecules; or (c) microbial fermentation;	Regulation (EU) No 10/2011
Rubber / Latex	Polymers based on either synthetic or natural materials that are cross-linked to give required physical performance properties and chemical resistance.	ISO 1382
Thermoplastics	Type of plastic made from polymer resins that become a homogenized liquid when heated and hard when cooled. When frozen, however, a thermoplastic becomes glass-like and subject to fracture. These characteristics, which lend the material its name, are reversible. That is, it can	PlasticsEurope[18]

[18] http://www.plasticseurope.org/what-is-plastic/types-of-plastics-11148/thermoplastics.aspx

Material	Definition	Source
	be reheated, reshaped, and frozen repeatedly.	
Elastomers	Materials which undergoes substantial, elastic ((fully) reversible) deformation when put under stress and consisting of three-dimensional networks of cross-linked flexible polymers	EN 71-12:2013

Definitions:

The term "direct skin contact" was discussed during the public consultation to comments on Annex XV restriction report on Chromium VI in leather articles[19]. It was then stated that skin exposure can occur via *indirect* skin contact even with the barrier of socks or stockings[20]. 'Direct skin contact" was therefore considered a measure which was not protective enough to avoid migration of substances to skin, and the restriction should refer to the entire shoes independently on the separation from the skin by a thin lining. According to Nardelli et al. [21] the upper leather typically constitutes the major part of possible skin exposure, showing a slight tendency to allergic reactions occurring on the upper foot.

Respective definition is therefore proposed for the purpose of the on-going EU Ecolabel criteria revision for Footwear.

Considering the specificity of the product group and having in mind the proposal to introduce the definitions that provide additional value in clear understanding of criteria requirements, the need to introduce specific materials definition should be verified during the AHWG2 Meeting as multiple materials might be used for footwear assembly.

Personal Protective Equipment

Of particular interest are following footwear categories that in accordance with stakeholders feedback are proposed to be included in the scope:

- Occupational Footwear, according to EN ISO 20347:2004, must comply with basic safety requirements (anti-static or slip resistant properties). This standard does not require a protective toe cap;
- Safety footwear according to the EN ISO 20345:2004: “a safety footwear is a footwear, incorporating protective features to protect the wearer from injuries which could arise through accidents, fitted with toecaps, designed to give protection against impact when tested at an energy level of at least 200 J and against compression when tested at a compression load of at least 15 kN”;
- Protective footwear according to EN ISO 20346:2004 (+ A1:2007) – Protective footwear must have a 100J toecap while the other properties are compliant with the markings as for EN 345-1;
- Forestry footwear according to EN ISO 17249:2004 (+ A1:2007) – Forestry footwear must have heat and fuel oil resistant outsole. This type of footwear is also design according to a protection level refered to the chain speed up (m/s)

[19]http://www.tuv-sud.com/home-com/resource-centre/publications/e-ssentials-newsletter/consumer-products-e-ssentials/vol.-66/latest-development-of-reach-annex-xvii-restriction-proposals-for-phthalates-and-chromium-vi

[20] Background document to the Opinion on the Annex XV dossier proposing restrictions on Chromium VI in leather articles. Committee for Risk Assessment (RAC) Committee for Socio-economic Analysis (SEAC). 2012

[21] Nardelli A, Taveirne M, Drieghe J, Degreef H, Goossens A. 2005. ”The relation between the localisation of foot dermatitis and the causative allergens in shoes: a 13-year retrospective study”. Contact Dermatitis 53:201-6.

- Footwear against chemicals according to EN 13832:2006 Parts 1-3 - This footwear resists degradation by certain stated chemicals. In addition the toecap strength (200J or 100J) should be compliant with protective or safety footwear.
- Firefighters' footwear according to EN 15090:2012 - F1 – Firefighters' footwear can be designed according to 3 different model: F1-Outdoor interventions without need for penetration, toe or chemical protection; F2 – Fire suppression and rescue with penetration and toe protection, without chemical protection; F3 – Fire suppression and rescue with penetration, toe and chemical protection year and at least quarter.

The specific footwear features and classification are regulated according to relevant safety European and International technical labels. In this specific case EU Ecolabel does not refer to the fitness for use criteria that should comply with the specific requirements in line with PPE Directive.

Proposals

- The product group scope should remain as footwear.
- The inclusion of injection moulding footwear will be clarified by changing the wording 'fixed sole' by 'applied sole', in line with Footwear Labelling Directive 94/11/EC.
- Footwear classified as personal Protective Equipment under Directive (PPE) 89/686/EEC are proposed to be included in the scope. From background information and stakeholders feedback, it seems that category III PPE inclusion will require specific analysis of those PPE that needs to reach certain level of flame retardance.
- The specific definitions are proposed.
- It is proposed to address "skin contact" as the entire construction of shoe uppers with the exclusion of leather made decoration. The decoration should be therefore considered as no skin contact. *It is however subjected to the further discussion with stakeholders if the elements of decoration could be granted more flexible approach*

Questions

- Are the definition proposed perceived as appropriate to be introduced in the EU Ecolabel for Footwear?

- Is the proposal for the "skin contact" acceptable? Should the elements of decoration be granted more flexible approach?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

Key points:

1. The introduction of the "skin contact" definition was perceived as not necessary, being rather intuitive. Some stakeholder disagreed with differentiating requirements based on skin contact for footwear. The definition was proposed to be withdrawn.

2. It remained unclear if footwear made in one piece through injection moulding was included in the scope.

3. To avoid misinterpretation stakeholders proposed to draft the list of materials that might be used during footwear manufacturing.

4. The introduction of requirement on the use of materials that comes from recycling was proposed.

5. Adding specific requirements on wool in line with EU Ecolabel for textile was proposed.

Follow up research:

1. Injection moulding is one of the many processes used for footwear manufacturing, in which the bottom part is applied/ moulded onto the shoe upper part. In general, the sole material is injected in a mould and forms a strong bond with the shoe upper while it cools off. It is therefore possible to distinguish shoe upper and sole in line with the proposed definitions. Changing the wording 'fixed sole' by 'applied sole' stems from Footwear Labelling Directive 94/11/EC. Annex II point (vi) of the Directive clearly specify inclusion of injection moulded footwear under provided definition of the product group "footwear". Products covered by Chapter 64 of the combined nomenclature may, as a general rule, be regarded as falling under the scope of this Directive

2. The definition of "skin contact"" was perceived as intuitive, considering that footwear is a product of personal use. Lining and socks are considered as being in close and prolonged contact with skin. Consequently, the definition was withdrawn on the base of stakeholders' feedback.

3. The definition of leather board set in the technical report was changed to leather fibre board in line with ISO EN 15987. Accordingly, the definition of chrome-free leather and vegetable tanned leather was integrated into Table 6, and proposed to be included in the user manual.

4. Analysis of the materials of possible use as components of the final product: As previously analysed[22] a broad variety of materials with very specific characteristics can be used in footwear production. In the EU, there is harmonised legislation regarding the labelling of materials in footwear.

   Footwear labelling Directive 94/11/EC distinguishes four main groups of materials: leather, coated leather, natural textile materials and synthetic or non-woven textile materials, and all other materials.

   According to DG TRADE analysis examples of materials commonly used in footwear include[23]: rubber, plastics, leather, composition leather and fur skin, textiles - including felt and non-wovens, plaiting materials, wood, cork. Rubber and plastics include woven fabrics, and other textiles with a visible external layer of one of these materials.

   ISO/TR 16178[24] specifies the following materials of possible use:
   - Coated leather;
   - Leather;
   - Leather fibre board,
   - PVC;
   - EVA foam:
   - Rubber, synthetic rubber, rubber foam;
   - Thermoplastic polyurethane (TPU);
   - Thermoplastic elastomers of thermoplastic rubbers (TPE-TPR);

[22] http://susproc.jrc.ec.europa.eu/footwear/docs/EU_Ecolabel_Footwear_%20Background%20Report.pdf
[23] http://trade.ec.europa.eu/doclib/docs/2013/may/tradoc_151161.pdf
[24] Footwear – critical substances potentially present in footwear and footwear components. Technical Report

- Latex;
- Blown material, foam
- Composite materials;
- Polyurethane (PU);
- Textile;
- Polyester;
- Polyester fibre;
- Polyamides;
- Polyacrylic;
- Natural textile;
- Print for textile;
- Wood;
- Cork;
- Adhesives;
- Metallic hardware
- Cellullosic material

Considering the broad range of different materials of potential use that will depend on product design, current fashion trends, and product functionality, for the clarity of the legal text, it is proposed not to introduce the definitions of materials used. The specification is proposed to be introduced in the User manual.

All footwear present on the market must be labelled in line with the Footwear labelling Directive 94/11/EC. The Directive applies to the labelling of the materials used in the main components of footwear for sale to the consumer. The labelling shall convey information relating to the three parts of the footwear namely: the upper, the lining and sock; and the outersole. The applicant should provide respective Competent Bodies with the specification of materials used % w/w separately for upper and sole part.

5. Use of recycled materials: The proposal to establish criterion that requires the minimum content of recycled material in footwear was proposed and discussed during the 1st AHWG. As reflected in Chapter 3: Withdrawn Criteria, generally, market share for shoe that contains material from pre- and post-consumer recycling was considered as niche. The information found refers rather to the specific footwear models or solutions applied by the individual producers as reflected in the Technical Background Report under Section 2.6.[25] According to the information gathered use of recycled material might affect the quality of the product. This % will depend on the residual material used, type of footwear and its technical requirements. Due to the lack of relevant data to build up the proposal combined with additional constrains of possible verification procedure, it was proposed to withdrawn the criterion from the on-going revision.

6. The need to set out a specific requirement for wool in line with EU Ecolabel for textile was pointed out within the consultation process. The exact market share of wool used in footwear is not known, hoverer wool was not found out as being one of the main materials used in a product[26,27]. The possible key application of wool might fall under the product type – slippers[28].

[25] http://susproc.jrc.ec.europa.eu/footwear/docs/EU_Ecolabel_Footwear_%20Background%20Report.pdf
[26] http://susproc.jrc.ec.europa.eu/footwear/docs/EU_Ecolabel_Footwear_%20Background%20Report.pdf
[27] PEFCR Pilot: Non-leather shoes
[28] According to EUROSTAT data, the apparel consumption of all type of slippers represented approx. 13% of market share in 2011

The total global production of wool is approximately 1.3 million tons per year but it is hard to find estimates for the production of organic wool. The figure is most likely to still be very small and it may be too early to have a criterion that requires a minimum content of organic wool. During the textile criteria development process stakeholders cited the limited development of the supply chain, albeit without data to back this up, and minimal customer demand[29].

The Commission Decision 2014/350/EU[30] establishing the ecological criteria for the award of the EU Ecolabel for textile products set the requirements on the following aspects of wool production.

a) Wool ectoparasiticide concentrations on raw wool prior to scouring;
b) COD values for the final discharge of effluent from wool scouring;
c) Requirement on the post-scouring operation.

From the perspective of an applicant (footwear manufacturer), and considering limited application of wool in footwear, the introduction of the criterion on wool origin could create additional burden providing limited environmental gaining.

[29] http://susproc.jrc.ec.europa.eu/textiles/docs/131021%20Ecolabel%20Textiles_EUEB%20vote_Technical%20report%20final.pdf
[30] OJ L 174, 13.6.2014, p. 45–83

2.2 Assessment and verification

Main proposed changes

The main focus of the discussion relates to adapting the functional unit and the materials thresholds. The functional unit is proposed to be changed in order to differentiate adults from children due to special protective measures required for children products.

The material content threshold of 3% is proposed not to be changed

Present requirement, Decision 2009/563/EC
The specific assessment and verification requirements are indicated within each criterion. Where appropriate, test methods other than those indicated for each criterion may be used if their equivalence is accepted by the competent body assessing the application. The functional unit is one pair of shoes. Requirements are based on shoe size 40 Paris point. For children's shoes the requirements apply for a size 32 Paris point (or the largest size in the case of maximum sizes smaller than 32 Paris point). Any upper shoe components weighing less than 3 % of the whole upper part shall not be taken into account for the application of the criteria. Any sole shoe components weighing less than 3 % of the whole outer sole shall not be taken into account for the application of the criteria. Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications. The competent bodies are recommended to take into account the implementation of recognised environmental management schemes, such as EMAS or ISO 14001, when assessing applications and monitoring compliance with the criteria (note: it is not required to implement such management schemes).
Suggested requirement, October 2013
The specific assessment and verification requirements are indicated within each criterion. Where appropriate, test methods other than those indicated for each criterion may be used if their equivalence is accepted by the competent body assessing the application. The functional unit is one pair of shoes. Requirements are based on shoe size: 42 Paris point for men and 38 Paris point for women. For children's shoes, the requirements apply to a size 32 Paris point (or the largest size, in the case of maximum sizes smaller than 32 Paris point). Any upper shoe components weighing less than 3 % of the whole upper part shall not be taken into account for the application of the criteria. Any shoe sole components weighing less than 3 % of the whole outer sole shall not be taken into account for the application of the criteria. In the case of a shoe made as one integral element, any components weighing less than 3 % of the whole product shall not be taken into account for the application of the criteria. Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications. Competent Bodies consider implementation of recognised environmental management schemes, such as EMAS or ISO 14001, or equivalent, when assessing applications and monitoring compliance with the criteria (note: implementation of such management schemes is <u>not</u> required).
Suggested requirement, May 2014
The specific assessment and verification requirements are indicated within each criterion. -

Where appropriate tests method other than those indicated for each criterion may be used if their equivalence is accepted by the Competent Body assessing application. If available, the testing shall be performed by laboratories that meet the general requirements of European Standard EN ISO 17025, or equivalent.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or supplier(s) and/or their suppliers, etc., as appropriate.

Where appropriate, Competent Bodies may require supporting documentation(s), and may carry out independent verifications.

Changes in suppliers and production sites pertaining to licensed products shall be notified to Competent Bodies, together with supporting information to verify ongoing compliance with the license conditions.

The Competent Bodies are recommended to take into account the implementation of recognised environmental management schemes, such as EMAS or ISO 14001, or equivalent, when assessing applications and monitoring compliance with the criteria (note: implementation of such management schemes is not required).

The functional unit is one pair of shoes. Requirements are based on shoe size: 42 Paris point for men, 38 Paris point for women, 40 Paris point for unisex models and 32 Paris point for children (or the largest size in the case of maximum sizes smaller than 32 Paris point).

Any upper shoe components made of identical material with total weight of less than 3 % of the whole upper part shall not be taken into account for the application of the criteria.

Any shoe sole components made of identical material with total weight of less than 3 % of the whole outer sole shall not be taken into account for the application of the criteria.

In the case of injection moulded footwear processed with the use of the same material and made as one integral element e.g. rain boots , any components weighing less than 3 % of the whole product shall not be taken into account for the application of the criteria.

Where the applicant uses a certification system to provide third party verifications the chosen system and associated systems for accreditation of verifiers shall meet the general requirements of EN 45011 and ISO 17065.

All textile materials which have been awarded EU Ecolabel for textile as established in Commission Decision xxxx/xx/xx, are considered being automatically compliant with the criterion 1(b), 3 (b), 6, 7, and 10.

Assessment and verification proposal, November 2014

The specific assessment and verification requirements are indicated for each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant or his supplier(s) or both.

Where possible, the testing shall be performed by laboratories that meet the general requirements of European Standard EN ISO 17025 or equivalent.

Where appropriate tests method other than those indicated for each criterion may be used if their equivalence is accepted by the Competent Body assessing application. Competent Bodies shall preferentially recognise tests which are accredited according to ISO 17025[31] and verification

[31] ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories

performed by bodies which are accredited under the EN 45011 standard or an equivalent international standard.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications or site visits.

The validity of the license is based on verification upon application, and where specified product testing which shall be periodically submitted to Competent Bodies for verification.

Changes in suppliers and production sites pertaining to licensed products shall be notified to Competent Bodies, together with supporting information to verify ongoing compliance with the license conditions.

The Competent Bodies are recommended to take into account the implementation of recognised environmental management schemes, such as EMAS or ISO 14001, or equivalent, when assessing applications and monitoring compliance with the criteria (note: implementation of such management schemes is not required).

The final product is one pair of shoes. Requirements are based on shoe size: 42 Paris point for men, 38 Paris point for women, 40 Paris point for unisex models and 32 Paris point for children (or the largest size in the case of maximum sizes smaller than 32 Paris point).

The criteria apply to the whole product both shoe upper and sole.

Unless specified, any upper shoe components made of identical material with total weight of less than 3 % of the whole upper part shall not be taken into account for the application of the criteria.

Unless specified, any shoe sole components made of identical material with total weight of less than 3 % of the whole outer sole shall not be taken into account for the application of the criteria.

Appendix I contains a Restricted Substance List that specifies restrictions and assessment and verification methods applying to identify substances of concern that may be used during production process or may be contained in the final product.

AHWG1 technical discussions

Functional unit

Sixty-four percent of the stakeholders who responded to this question found the current definition of functional unit precise and adequate, as shown in
Figure 2. The stakeholders who expressed a different view on the functional unit found proposed the proposed new sizes more appropriate, being more representative of the current foot sizes.

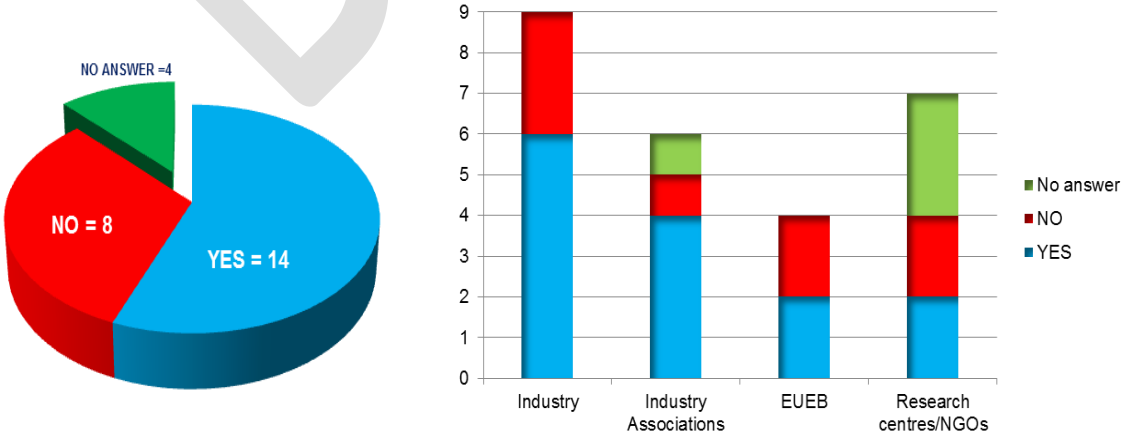

Figure 2: Stakeholders' feedback for the functional unit definition

The EU Ecolabel functional unit serves as the reference in order to fairly compare products of the same category, size being most logical reference unit. As highlighted by stakeholders, the proposal is to use the most common, differentiated by gender, European footwear sizes, as follows:

- Men: 42 Paris point (size 8 in UK system)
- Women: 38 Paris point (size 5 in UK system)
- Children: 32 Paris point (size 13-13.5 in UK system)

Threshold

Because uppers and soles generally have distinct compositions, the proposal is to keep them separated. Because the threshold is the same for both parts, the requirement still applies for more complex (or simpler) footwear where the upper and the sole cannot easily be distinguished. Nevertheless, in the case of a shoe made as one integral element, the proposal is that the threshold of 3% is applied to the entire product. Most of the stakeholders (70%) are in favour of maintaining differentiation of the uppers and soles.

Sixty-six percent of stakeholders who answered this question are in favour of keeping the same threshold (3%). The opinion of the remaining stakeholders was split between increasing and decreasing the threshold, based on the following arguments:

- Lower limit (0-1%): some materials cause much higher negative environmental impacts than others relative to their mass. In addition, some substances can create problems independently from their quantity.
- Higher limit (5-10%): footwear may consist many different materials; therefore, applying for the EU Ecolabel may become very complex and time consuming. Increasing the threshold would limit the evaluation to the most representative materials.

Possible option to increase market penetration of the EU Ecolabel for footwear

According to the questionnaire, one of the main constraints that appears to hinder industry application for the EU Ecolabel for footwear is the quick and seasonal evolution of fashion industry. Therefore, the proposal is to initiate a discussion during the AdHoc Working Group Meeting to introduce a new approach that could potentially overcome this aspect of fashion industry, being inspired by the specification introduced in the EU Ecolabel Copying and graphic paper User's Manual.

The proposal is to provide the applicant with easy-to-use procedures in order to adapt or extend a range of licensed products, beyond the fashion cycle of targeted industry.

In case the application has been positively processed by the Competent Body and the contract holder wants to extend his range of products, the following conditions could apply:

- Extension with new identification/reference commercial names, which do not affect the criteria, can be achieved by sending specific information to the Competent Body. Extension should apply when materials specifications (type, suppliers, colour, production method) used for the new product assembly are similar to those contained in the licensed products, but used in different proportions. In this case, a letter of prolongation would be sent to the competent body with the new trademark and the name of the similar product certified previously. After validation of the new environmental labelling, a certificate with the new commercial reference could be sent.
- Extension with new technical characteristics (for example new materials, new chemicals, dyes, etc.) or for a new type of product, as far as these are affected by the criteria, must be approved by the Competent Body prior to use. This must be done by

informing the Competent Body with an extension letter and the necessary documentation for these (including an updated 'List of Chemicals').

AHWG1 stakeholder feedback

Gender and size distinction

In general, industry stakeholders were in favour of the size distinction by gender, as follows: men, women, and children. Many stakeholders have confirmed that the proposed size separation reflects the current industry state-of-the-art (men: 42, women: 38, children: 32). However, some stakeholders have stated that the representative size for women footwear is rather 37 Paris Point. One stakeholder recalled the existence of unisex footwear.

Those stakeholders that did not support the additional classification according to gender agreed that separation of footwear for children was necessary considering specific chemical requirements for children products.

Materials threshold

Most stakeholders were in favour of maintaining the current material threshold at 3%. Some stakeholders proposed its lowering as the minor components may have a significant impact; when the others were in favour of its raising stating that footwear is a very complex product in which variety of different components might be used, and material which weight is lower than 3% do not have any specific relevance. The introduction of the threshold of 10% w/w was simultaneously proposed.

It should additionally be clarified, that considerable differences in footwear weight (e.g. flip floaps vs. trekking shoe) makes impossible to introduce constant material weight threshold value in g. It was suggested to clarify that the material content threshold refers to the sum of weight of identical materials used for footwear upper or sole.

License expansion

The proposal to accommodate quick turn-over fashion products by introducing a respective specification of license extension was generally welcomed by industry stakeholders mainly considering the dynamism of the design and stability of the cooperation with material suppliers.

It was however recommended not to introduce specific requirement into the criteria legal text, but rather refer to in the User Manual.

Follow-up research

On the base of stakeholder's interaction, the ADEME-AFNOR PCR for footwear suggests the following size distinction for footwear:

- size 42 for the men's models ;
- size 38 for the women's models ;
- size 40 for the mixed models ;
- size 28 for the children's models ;
- size 21 for the infant's first steps models.

The different schemes were cross-checked to analyse the best approach for the % w/w of material content threshold,:

- Blue Angel for footwear introduced 10% by weight threshold for production or manufacturing criteria of specified raw materials, and 3% by weight for cotton and all specific substances requirements (chemicals, auxiliary and dyes);
- Good Environmental Choice Australia Stanndard introduced 5% w/w threshold for materials requirements;
- Following Japanese Eco Mark for footwear: the threshold for material criteria and certification procedure is specified as: "*surface area in the relevant portion shall be totalled in descending order and the material that composes not less than 70% of the surface area of the relevant portion shall be subject to the criteria. This shall not apply to small accessories such as buttons, strings, sewings thread, trimmings, etc*";
- According to the Nordic Swan for Textile, hides/skins and leather fibres types, the introduced threshold value for fibre type/hide/ leather is 5% of the total weight.

Proposal

1. It is proposed to specify shoe sizes reflecting the current industry state-of-the-art as common basis, and following the stakeholders' feedback:

- size 42 for the men's models;
- size 38 for the women's models;
- size 40 for the mixed models;
- size 32 for the children's models;

Mixed model (unisex) was added as suggested by stakeholder and proposed by the ADEME-AFNOR PCR.
2. Regarding the materials threshold, it is suggested to maintain 3% w/w as no consensus between stakeholders could be reached on this questions. Additional cross check of the other schemes of relevance proved that the current threshold laid down in the EU Ecolabel criteria for footwear under revision represents demanding ambitious level.
3. In order achieve synergy between different EU Ecolables, it is suggested not to require criteria verification for the EU Eco labelled textile used for footwear assembly.

Questions

- Should the size of women footwear be set at 37 or 38?
- Is it accepted to detract the EU Ecolabelled textiles used for footwear production from the verification process of specified criteria?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

1. The revised proposal of assessment and verification was perceived as additional complication with limited added-value for the criteria itself.

2. Lack of clarity in the introduction of 3% w/w cut-off limit in the criteria framework was addressed. The impact on chemical criteria was perceived as the main constraint.

Follow up research

1. The intention behind inclusion of the extensive verification description under the criteria framework was twofold. Firstly, the harmonization between different product groups was looked for. Secondly, additional specification was meant to improve the clarity of requirements for general verification. The revised text proposal takes into consideration the comments received maintaining the primary objective of harmonization with other product groups.

2. 3% w/w threshold refers to the sum weight of identical materials (e.g. polyester, leather, imitation leather, viscose, neoprene, etc.), used in the final product and not to hazardous substances content. The hazardous substances content in the final product is verified by the Criterion 6 and Criterion 7 (Restricted Substance List). Other schemes of reference use a similar approach (Blue Angel, Nordic Swan).

   The data gathered during the questionnaire and literature review shows the high variability of product weigh (400-1300 g/pair)[32]. Thereupon, introduction of an absolute weight thresholds could create the situation in which requirements for some types of footwear are more restrictive (e.g. protective shoe) when contrasting to the others (e.g. flip-flops). The cut-off limit that refers to % w/w of each product and accommodates the dynamic nature of footwear. Setting the threshold at 3% w/w aims at the reduction of the verification burdens and focuses on these materials that constitute the relevant part % w/w of the final product.

   The differentiation of upper and sole part is justified by the usual difference in weight between these two parts. Applicant should specify the weight of the final product, and provide information on the weight of the composing materials. The specification should cover entire footwear with the separation between upper and sole.

3. Footwear sizes of reference were aligned with the ADEME-AFNOR PCR for Footwear,[33] being in line with methodology adapted during Life Cycle Assessment of the base case conducted in the frame of the on-going revision of EU Ecolabel for Footwear[34].

[32] On the base of questionnaire conducted, information reflected in Preliminary Background Report, and PEFCR Pilot for Non-leather shoes
[33] PCR for footwear developed by the ADEME-AFNOR, BPX 30-323-1
[34] Further information can be found in Preliminary Background Report under Section 3.

2.3 Criteria proposals

2.3.1 CRITERION 1: Materials origin

New criterion

Criterion proposal, October 2013
1(a) origin of hides and skins Only raw hides and skins from animals kept primarily for milk and/or meat production are allowed to be used in the product. Wild, endangered or vulnerable species according to International Union for Conservation of Nature (IUCN) Red List of Threatened Species cannot be used. Assessment and verification: The verification of criterion is required if the footwear structural elements are labelled as leather in line with Directive 94/11/EC.[35] (i) The applicant shall submit a declaration from the leather manufacturer stating that no hides and skins of threaten species according to the IUCN classification are used, or that the leather-manufacturing company conducts compliance verification checks on the raw materials used. (ii) The applicant/or leather supplier should declare that supplying contract specifies the requirement of compliance with the criterion. The verification can be provided by showing that regulatory requirements that apply to the agriculture site geographical location restrict the use of substances that are: (i) listed in Directive 2008/105/EC on environmental quality standards in the field of water policy, (ii) listed in Regulation (EC) No 850/2004 on persistent organic pollutants, and (iii) classified as carcinogen, mutagen or reprotoxic according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. 1(b) cotton and other natural cellulosic seed fibres Cotton and other natural cellulosic seed fibres (hereafter referred to as cotton) shall contain a minimum content of xx% either organic cotton or xx% of IPM (Integrated Pest Management) cotton. In addition to this: Products meeting specific content thresholds for organic or IPM cotton shall be permitted to display additional text alongside the Ecolabel communicating the content claim. Assessment and verification: The applicant should provide a declaration of compliance with this criterion from the cotton manufacturer. 1(c) Origin of natural rubber, wood, and cork Virgin wood, cork or natural rubber may not come from illegal felling and trade or from forests that need to be protected for ecological and/or social reasons. The material shall be covered by valid sustainable forest management and chain-of-custody certificates issued by an independent third-party certification scheme such as FSC, PEFC or equivalent. Cellulose for synthetic cellulose fibres must come from sustainable forestry. Where certification schemes allow mixing of certified material and uncertified material in a product or product line, the proportion of uncertified material shall not exceed xx %. Such uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material. The certification bodies issuing forest and/or chain of custody certificates shall be

[35] OJ L 100, 19.04.1994, p. 37

accredited/recognised by that certification scheme.

Assessment and verification: The applicant shall provide information on the geographic origin of wood, cork or the natural rubber used for producing rubber products. With respect to the wood, cork, natural rubber or cellulose fibres used by the applicant shall submit certificates establishing compliance with this criterion. Certificates will be accepted from the independent third-party certification scheme, such as the Forest Stewardship Council (FSC), or equivalent, providing evidence of sustainable forestry and a chain of custody (CoC). Regarding wood from the European economic area (EU and EFTA), the PEFC certification scheme is recognized as equivalent (PEFC - Programme for the Endorsement of Forest Certification Schemes).
If the product or product line includes uncertified material, proof should be provided that the uncertified material is less than 50 % and is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

Suggested criterion, May 2014

1(a) origin of hides and skins

(i) Only raw hides and skins from animal raised for milk and/or meat production are allowed to be used in the product. Threatened species according to International Union for Conservation of Nature (IUCN) Red List of Threatened Species cannot be used[36].

(ii) Hides or skins should not have been treated with the following pesticides:
Aldrine, Chlorthalonii, DDT, DDE, DDD, Dieldrine, Endrin, Ethylparathione, Endosulfanes, Isodrin, Mirex, Dichlofluanide, HCH's without Lindane, Heptachloroepoxide, Lindane, Pentachloroanisol, Malathione, Permethrine, Methoxychlor, Tolyfluanide.

Assessment and verification:
The verification of criterion is required if the footwear structural elements are labelled as leather in line with Directive 94/11/EC.[37]

(i) The applicant shall submit a declaration from the leather manufacturer stating that no hides and skins of threaten species according to the IUCN classification are used, or that the leather-manufacturing company conducts compliance verification checks on the raw materials used.
(ii) The applicant/or leather supplier should declare that supplying contract specifies the requirement of compliance with the criterion. The verification can be provided by showing that regulatory requirements that apply to the agriculture site geographical location restrict the use of substances that are:
  - listed in Directive 2008/105/EC on environmental quality standards in the field of water policy,
  - listed in Regulation (EC) No 850/2004 on persistent organic pollutants, and
  - classified as carcinogen, mutagen or reprotoxic according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

1(b) cotton and other natural cellulosic seed fibres

(i) Cotton and other natural cellulosic seed fibres (hereafter referred to as cotton) shall contain a minimum content of 10% w/w either organic cotton or 20 %w/w of IPM (Integrated Pest

[36] http://www.iucnredlist.org/
[37] OJ L 100, 19.04.1994, p. 37

Management) cotton. In addition to this, products meeting specific content thresholds for organic or IPM cotton shall be permitted to display additional text alongside the Ecolabel communicating the content claim.

(ii) The following list of pesticides should not be used in cotton and IPM scheme:
Alachlor, aldicarb, aldrine, campheclor (toxaphene), captafol, chlordane, 2,4,5-T, chlordimeform, chlorobenzilate, cypermethrin, DDT, dieldrin, dinoseb and its salts, endosulfan, endrin, glyphosulfate, heptachlor, hexachlorobenzene, hexachlorocyclohexane (total isomers), methamidophos, methyl-o-dematon, methylparathion, monocrotophos, neonicotinoids (clothianidine, imidacloprid, thiametoxam), parathion, phosphamidon, pentachlorophenol, thiofanex, triafanex, triazophos.

Assessment and verification:

The verification of criterion is required if the footwear structural elements are labelled as textile in line with Footwear Labelling Directive, and contain 40% w/w of cotton. The applicant should provide a declaration of compliance with this criterion from the cotton manufacturer. As proof of compliance to this requirements the award of the EU Ecolabel for textiles when it is based on the EC Decision XX/XX/XXX is also accepted.

(i) Organic content should be certified by an independent control body to have been produced in conformity with the production and inspection requirements laid down in Regulation 834/2007/EC or the US National Organic Programme (NOP). Verification shall be provided on an annual basis for each country of origin.

The applicant shall provide evidence that the cotton has been grown by farmers that have participated in formal training programmes of the UN FAO or Government IPM and ICM programmes and/or that have been audited as part of third party certified IPM schemes. Verification shall either be provided on an annual basis for each country of origin or on the basis of certifications for all IPM cotton bales purchased to manufacture the product.

(ii) For the restricted list of pesticides, the applicant shall provide declarations of non-use. A list of active substance used during plant growing shall be also provided, including concentrations and related H statements/R phrases, and compliance with Criterion 6 shall be demonstrated accordingly.

1(c) Origin of natural rubber, wood, and cork

Virgin wood, cork or natural rubber present in the sole for over 40% w/w shall not come from illegal felling and trade or from forests that need to be protected for ecological and/or social reasons. The material shall be covered by valid sustainable forest management and chain-of-custody certificates issued by an independent third-party certification scheme such as FSC, PEFC or equivalent. Cellulose for synthetic cellulose fibres must come from sustainable forestry.

Where certification schemes allow mixing of certified material and uncertified material in a product or product line, the proportion of uncertified material shall not exceed 50%w/w. Such uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

Assessment and verification:

The applicant shall provide information on the geographic origin of wood, cork or the natural rubber used for producing rubber products. With respect to the wood, cork, natural rubber or cellulose fibres used by the applicant shall submit certificates establishing compliance with this criterion. Certificates will be accepted from the independent third-party certification scheme, such as the Forest Stewardship Council (FSC), or equivalent, providing evidence of sustainable forestry and a chain of custody (CoC). Regarding wood from the European economic area (EU and EFTA), the PEFC certification scheme is recognized as equivalent (PEFC - Programme for the Endorsement of Forest Certification Schemes).

If the product or product line includes uncertified material, proof should be provided that the uncertified material is less than 50 % and is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

The certification bodies issuing forest and/or chain of custody certificates shall be accredited/recognised by that certification scheme.

Criterion proposal, November 2014

(a) Hides and skins

Only raw hides and skins from animals raised for milk and/or meat production are allowed to be used in the product. Threatened, vulnerable or endangered species, according to categories established by International Union for Conservation of Nature (IUCN) Red List of Threatened Species, shall not be used[38].

Leather used in the interior parts of footwear (linings and socks) for children of less than 3 years old shall be processed by chromium-free tanning.

Compliance with the criterion is required for uppers or soles containing at least 10% of leather.

Assessment and verification: the applicant shall submit a declaration from the leather manufacturer stating that no hides and skins of threaten, vulnerable or endangered species, according to the IUCN classification, are used, and that the leather-manufacturing company conducts compliance verification checks on the raw materials used.

For interior parts of footwear the applicant shall submit a declaration from the leather manufacturer/or leather supplier, as appropriate, with the information that leather used is chromium-free tanned. The declaration shall specify the tanning technology used in processing of the raw leather.

(b) Cotton and other natural cellulosic seed fibres

Cotton and other natural cellulosic seed fibres (hereinafter referred to as cotton) shall contain a minimum content of either organic cotton (see criterion 1(b) (i) or integrated pest management (IPM) cotton (see criterion 1(b) (ii).

In addition to this: — All conventional cotton and IPM cotton used shall comply with the pesticide restrictions in criterion 1(b) (iii).

[38] http://www.iucnredlist.org/

For the production standard organic, all conventional cotton and IPM cotton used shall come from non-genetically modified varieties.

Textile products that are awarded with the EU Ecolabel based on the ecological criteria of the Commission Decision 2014/350/EU are compliant with the Criterion 1b). In this case, the applicant shall demonstrate the compliance with the criterion by providing a copy of the EU Ecolabel certification with a proof that this was awarded in accordance with the Commission Decision 2014/350/EU.

(i) Organic cotton

With the exception of footwear for children of less than 3 years old a minimum of 10 % of the cotton shall be grown according to the requirements laid down in Regulation (EC) No 834/2007[39], the US National Organic Programme (NOP) or equivalent legal obligations set by trade partners of the EU. The organic cotton content may include organically grown cotton and transitional organic cotton.

At least 95% of cotton used in footwear intended for children of less than 3 years old shall be organic.

Assessment and verification: the applicant shall provide evidence confirming that at least 10% of the cotton contained in the product is organic cotton, certified by an independent control body to have been produced in conformity with the production and inspection requirements laid down in Regulation (EC) No 834/2007 the US National Organic Programme (NOP) or those set by other trade partners. Verification shall be provided on an annual basis for each country of origin.

For footwear intended for children under 3 years old the evidence that the cotton used is 95% organic shall be provided.

Non-genetically modified varieties of cotton shall be verified in conformity with Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms.

(ii) Cotton production according to IPM principles

A minimum of 20 % of the cotton used in the product shall be grown according to IPM principles as defined by the UN Food and Agricultural Organisation (FAO) IPM programme or Integrated Crop Management (ICM) systems incorporating IPM principles, and shall comply with the pesticide restrictions given in criterion 1(c).

At least 60% of cotton used in footwear intended for children of less than 3 years old shall be grown according to IPM principles.

Assessment and verification: *the applicant shall provide evidence that at 20% of the cotton contained in the product, or 60% in case of footwear for children of less than 3 years old, has been grown by farmers that have participated in formal training programmes of the UN FAO or Government IPM and ICM programmes and/or that have been audited as part of third party certified IPM schemes. Verification shall either be provided on an annual basis for each country of origin or on the basis of certifications for all IPM cotton bales purchased to manufacture the*

[39] Council Regulation (EC) No 834/2007of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 (OJ L 189, 20.7.2007, p. 1)

product.

Compliance with the pesticide restriction shall not be required for schemes that prohibit use of the substances listed in point 1 (b) (iii) and where either testing is carried out or declarations of non-use are obtained from farmers and/or farmer producer groups that are verified by site visits carried out by control bodies accredited by either national governments or recognised organic or IPM certification schemes.

Non-genetically modified IPM cotton used in combination with organic cotton shall be verified in conformity with Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms. IPM schemes that exclude genetically modified cotton shall be accepted as proof of compliance for IPM content.

(iii) Pesticide restrictions applying to conventional and IPM cotton

All cotton used, with exception of organic cotton and applicable IPM schemes, shall be grown without the use of any of the following substances: alachlor, aldicarb, aldrin, campheclor (toxaphene), captafol, chlordane, 2,4,5-T, chlordimeform, chlorobenzilate, cypermethrin, DDT, dieldrin, dinoseb and its salts, endosulfan, endrin, glyphosulfate, heptachlor, hexachlorobenzene, hexachlorocyclohexane (total isomers), methamidophos, methyl-o-dematon, methylparathion, monocrotophos, neonicotinoids (clothianidine, imidacloprid, thiametoxam), parathion, phosphamidon, pentachlorophenol, thiofanex, triafanex, triazophos.

Assessment and verification: the applicant shall provide declarations of non-use of the pesticide listed in criterion 1 (a) (iii). A list of active substance used during plant growing shall be also provided, including concentrations and related H statements/R phrases.

(c) Origin of wood and cork

This criterion applies to footwear uppers or soles which are composed of at least 10% w/w/ of wood or cork.

Wood and cork may be of recycled or virgin material.

Virgin wood and cork shall be covered by valid sustainable forest management and chain of custody certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent.

In case certification schemes allow mixing of uncertified material, with certified material or recycled material in a product or product line, the proportion of uncertified virgin material shall not exceed 30% of the total. Such uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets the requirements of the certification scheme with respect to uncertified material. The certification bodies issuing forest and/or chain of custody certificates shall be recognised by that certification scheme.

Assessment and verification: the applicant shall provide documentation on the types, quantities and origin of wood or cork used in footwear. Valid forest management and chain of custody certificates issued by an independent third party certification scheme, such as PEFC, FSC or equivalent shall be provided. If the product or product line includes uncertified material, proof should be provided that the content of uncertified material is equal or lower than 30 % and that it is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

(d) Origin of natural rubber

This criterion applies to footwear uppers or soles which are composed of at least 10% of natural rubber,

Natural rubber shall originate from plantation covered by valid sustainable forest management and chain of custody certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent. Alternatively, natural rubber shall be legally sourced and meet requirements of the respective certification schemes.

Assessment and verification: the applicant shall provide documentation that certifies that the material used is covered by valid forest management and chain of custody certificates issued by an independent third party certification scheme, such as PEFC, FSC or equivalent. If the product or product line includes uncertified material, proof shall be provided that the uncertified material is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

(e) Man-made cellulose fibres (including viscose, modal and lyocell)

This criterion applies to footwear uppers or soles which are composed of at least 10% w/w/ of man-made cellulose fibres.

A minimum 25 % of pulp fibres shall be manufactured from wood that has been grown according to the principles of sustainable forestry management as defined by the UN FAO. The remaining proportion of pulp fibres shall be from pulp that is sourced from legal forestry and plantations.

Textile products that are awarded with the EU Ecolabel based on the ecological criteria of the Commission Decision 2014/350/EU comply with the Criterion 1e).

Assessment and verification: the applicant shall obtain from the fibre manufacturer(s) valid, third-party certified chain of custody certificates demonstrating that the wood fibres have been grown according to sustainable forestry management principles and/or are from legal sources. FSC, PEFC or equivalent schemes shall be accepted as independent certification.

The fibre manufacturer shall demonstrate that due diligence processes have been followed as specified in Regulation (EC) 995/2010[40] in order to ensure that timber has been legally harvested. Valid EU Forest Law Enforcement, Governance and Trade (FLEGT) or UN Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) licenses and/or third party certification shall be accepted as evidence of legal sourcing.

In case of textiles that are awarded with the EU Ecolabel, the applicant shall demonstrate the compliance with the criterion by providing a copy of the EU Ecolabel certification with a proof that this was awarded in accordance with the Commission Decision 2014/350/EU.

AHWG1 technical discussion

The LCA revealed that input materials have great impacts on the environment, being responsible for 40-90% of the impact share, depending on the impact category considered. In line with the LCA

[40] Commission Regulation (EU) No 995/2010

findings, the main areas of best practices identified under Task 2 of the Preliminary Report pertain to the use of more sustainable raw materials. It also has been suggested by stakeholders that fairness among main material types used in footwear manufacturing should be considered; therefore, leather, textiles, synthetic materials, natural rubber, wood and cork are considered.

(a) Origin of hides and skins

The agriculture phase[41] represents a significant share of total emission impact, e.g., energy consumption accounts to 50-60% of the whole life cycle impact of leather (Mila et al, 2002). As analysed through a specific LCA case study, depending on the impact category, the overall impact impacts of the agricultural phase, i.e., farming and slaughtering, can account for as much as 18 to 80 % of the life cycle impacts of footwear, although only 10% of these impacts are allocated to the hides. Consequently setting requirement on sustainable farming would be justified to encourage possible reduction of environmental impact of this phase. However, it should be noted that footwear is one of the most globalized goods; thus, cattle raising, tanning, and final product manufacturing could be subjected to inter-continental trading. Therefore, the issue regarding the ability of footwear manufacturer to control the agriculture phase arises.

Organic agricultural methods are internationally regulated and legally enforced by many nations, based in large part on the standards set by the International Federation of Organic Agriculture Movements (IFOAM), an international umbrella organization for organic farming organizations established in 1972.[42] The Rainforest Alliance offers third-party certification and ecolabelling services to forests and farms managed in ways that reduce environmental impacts and increase social benefits. The RA-Cert Division evaluates and certifies sustainable forestry operations under the standards of the Forest Stewardship Council (FSC) using the Rainforest Alliance CertifiedTM Seal and FSC labels. Likewise, this unit evaluates sustainable agriculture using the Sustainable Agriculture Standards and certifies compliance using the Rainforest Alliance CertifiedTM Seal[43].

The IUCN Red List of Threatened Species (also known as the IUCN Red List or Red Data List), founded in 1963, is the world's most comprehensive inventory of the global conservation status of biological species. The International Union for Conservation of Nature (IUCN) is the world's main authority on the conservation status of species. A series of Regional Red Lists are produced by countries or organizations to assess the risk of extinction for species within a political management unit.

It is important to stress that following ADEME-AFNOR and EPD System PCRs for footwear, the agriculture phase is considered as being out of scope for the analysis. Nevertheless, we recommend introducing one criterion that involves the requirement on the origin of hides and skins used in the leather-making industry. In assuring that the animals have been farmed primarily for their meat and milk, hides and skins can be considered as a by-product. Therefore, most environmental impacts can be attributed to the production of meat and milk[44]. The Nordic Swan requires that there is traceability on the origin of leather (from the slaughterhouse, the hide distributors, and the tannery).

(b) Organic cotton

[41] Including cattle raising

[42] Paull, J. 2010. From France to the World: The International Federation of Organic Agriculture Movements (IFOAM), Journal of Social Research & Policy, 1(2), pp.:93-102.

[43] http://www.rainforest-alliance.org

[44] UNIDO, Life Cycle Assessment/Carbon Footprint in the Leather Processing (Review of methodologies and recommendations for harmonization), October 2012

According to EUROSTAT data, footwear with textile uppers accounts to 7% by volume of the European textile production, and 19 % of apparent consumption (Eurostat, 2011). Cotton has been identified as one of the main textiles used by footwear sector.

Traditional cotton production requires large quantities of pesticides, covering 2.5% of the world's cultivated land yet using 16% of the world's insecticides--more than any other single major crop .The quantitative analysis of improvement potential for one pair of footwear has been guided by the criterion of the EU Ecolabel for textiles which requires that 50 % of cotton used in the final product[45] be grown using one or a combination of the following three production standards:

(a) Cotton grown without the use of restricted pesticides,
(b) Cotton grown according to IPM principles,
(c) Cotton grown according to Organic standards.

Based on these assumptions, the improvement potential on the baseline scenario is 3 % on freshwater eutrophication. For other impact categories, the improvement potential is less than 1 %.

According to (IMPRO-Textiles, 2013), GM cotton has experienced a dramatic increase in cultivation since its introduction, augmenting global production by approximately 44 % from 2002 to 2005. Transgenic crops offer the benefit of increased yields and lower costs due to the reduced application of agrochemicals. Therefore, it seems that GM cotton might be an economical replacement for conventional cotton crops. However, one issue that has come to light in recent years is the decrease in marginal returns from GM crop cultivation due to stagnating or even decreasing yields in the long run (Eyhornet al., 2007). Pest resistance to some GM crop defences is also a concern, however, and some cases have already been confirmed. Although organic cotton cultivation has increased in the past years, its uptake has been relatively modest and relatively insignificant in comparison with global cotton production (Baffes, 2004).

In general terms, the costs of production, processing and seed purchase still remain a major threat to the organic cotton industry. Several companies have announced the use of organic cotton, including Adidas, H&M, Nike, Ethletic, Veja, and Mark and Spenser, among others.

(c) origin of natural rubber, wood, and cork

Footwear with wood soles account for 4% of European production, and 1% of apparent consumption by volume. The data on the content of natural rubber cannot be extracted from official European statistical data because it is aggregated with synthetic rubber; together, both types of rubber account for 12% of European production, and 43% of consumption (Eurostat, 2011). However, considering the scarcity of natural rubber, it is assumed that shoes that contain natural rubber represent only minor market share. From this point of view, the need for requiring sustainable wood as raw materials might not be supported. However, the introduction of sustainable sourcing of wood in the criteria has been added to ensure that illegal and unsustainable sourcing of materials of natural origin (wood, cork, rubber) is not allowed in EU ecolabelled products.

Introduction of the criterion is also supported by Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 which specifies the obligations for operators who place timber and timber products on the market – also known as the Timber Regulation. This regulation prohibits introduction of illegally harvested timber and products derived from such timber into the EU market, requiring EU traders who place timber products on the EU market to

[45] Commission Decision draft proposal of May 2013

exercise 'due diligence,' as specified by Commission Implementing Regulation (EU) No 607/2012 of 6 of July 2012.

Even if criterion requirement is not expected to bring significant benefits at the product group level compared to other product groups, it will help protect the credibility of the EU Ecolabel. Moreover, natural materials are often used by companies that profess the environmental benefit of using them instead of synthetic materials. Therefore, it seems that the criterion would meet market expectations.

Blue Angel for footwear set the similar approach establishing the requirements on tracing of the material origin.

AHWG1 stakeholder feedback

The proposal to introduce the requirement on tracing of raw materials origin met support among some stakeholders. The possible exclusion of hides from the Brazilian rainforest was further proposed, it was therefore suggested to analyse the European market share for Brazilian leather.

One stakeholder observed that wild animals could also serve as a food source, and another mentioned that killing wild animals for their meat should not be considered as unsustainable. For example, crocodile farming might be very sustainable, similar to kangaroo farming. The low market share of these kinds of skins was stated.

One stakeholder highlighted that the requirement on leather origin for wild animals did not make sense because, on one hand, it is in most cases redundant with the first part of the criterion on leather, and, on the other hand, the CITES convention already regulates the trade of wild animals.

On the other hand, it was observed that tracing the origin of the leather might be complicated for tanneries, and the environmental label should not require this kind of obligatory information, due to the technical constraints. The fashion industry often uses exotic animals e.g. reptiles.

One Competent Body objected to setting the same label for organic cotton and IPM, considering that IPM had no clear certification.

Some stakeholders emphasised that each criterion on origin of materials should only be applicable if the footwear was made up of a minimum percentage of the material considered. If the footwear contains only a small amount of cotton (e.g. 5%), the benefits of requiring organic does not bring significant benefit especially when contrasting to the effort to achieve the verification data. Some stakeholders have proposed 40% as the reference threshold.

One stakeholder suggested to rephrase the criterion on leather origin in a “negative” list way in order not to only focus on milk and meat but also avoid other issues e.g. fur.

In general, international leather certification schemes were perceived as niche. In general, criteria on cotton, wood and cork were accepted by stakeholders.

Follow-up research

In Australia kangaroo harvesting is carried out under the strict environmental controls provided by the *Australian Government’s Environment Protection and Biodiversity Conservation Act 1999*. The

commercial harvesting of widespread and abundant kangaroo species contributes to the sustainability of the Australian environment.[46]

Leather from Rainforest Alliance Certified™ has been put on the market in 2013 in specific product[47]. No statistical data is available about the market segmentation of RAC certified leather. In conclusion, no well market distributed sustainability scheme for leather has been found in available sources, nor provided by stakeholders. Leather Working Group introduced the criterion on tracing back leather origin into the auditing scheme.

In 2013, 144 000 tonnes of raw hides and skins, and leather were imported from Brazil into Europe, representing 23 % of European imports (Eurostat database). It is however not possible to assess the quantity of imported Brasilian leather that might come from Rainforest Area.

The analysis of material weight threshold of xx% w/w for which the material origin criterion could apply led to following findings and conclusions:

- The introduction of the obligation to comply with the criterion if the material content is higher that established threshold would simplify the application excluding footwear elements of low to negligible content w/w.
- The EU Ecolabel for Textile introduced a specific requirement for a minimum organic and IPM cotton content in function of the key product types.
- EU Ecolabel for Bed Mattresses proposes that the minimum content of latex foam, PU foam, wire and springs, and coconut fibres must be at least 5% w/w each for the criteria related to these materials.
- Blue Angel for Footwear introduces the threshold of 10% for all bootleg and/or sole materials for origin of raw hides and skins, natural rubber wood and cork. Whereas natural textile (e.g. cotton, hemp, flax) that account for more than 3% by weight of the final product shall come from certified organic farming/livestock breeding..
- Footweear Labelling Directive 94/11/EC requires producers to provide information on the material covering at least 80% of the surface areas or 80% of the volume of the outer-sole. If several materials account for this 80 %, information should be given for the two main materials composing of the footwear. The labelling shall provide information on the material covering at least 80% of the surface areas or 80% of the volume of the outer-sole. If several materials account for this 80 %, information should be given for the two main materials composing of the footwear.

Pescticides

In the textile industry pesticides compounds are mainly used for natural fibre protection, primarily cotton. According to stakeholders consultation they might also be found in latex, as being added during transport for preventing the growth of insects and fungi.

The EU Ecolabel for textile and Bed Mattresses (latex) developed the list of pesticides that should be specifically restricted. It is therefore proposed to look for alignment with these product groups.

No pesticides requirements are proposed for latex considering relatively low use of natural rubber in footwear production. This topic should however be further analysed within consultation process.

What is used: leather

[46] https://www.dfat.gov.au/facts/kangaroos.html

[47] http://www.rainforest-alliance.org/newsroom/press-releases/gucci-goes-sustainable

Raw hides and skins may contain pesticides that are applied to the animal to protect it from disease during its life. Pesticides are used in farm animal husbandry to deal with ectoparasites. Different pesticides can be used on sheep and cattle. Arsenic is still used for animal treatment in some parts of the world. They can remain in the hide or skin for some time and can be introduced into the float from this source. Currently, there is a trend to substitute organophosphates with synthetic pyrethroids, but synthetic pyrethroids are reported to be more toxic to aquatic life than organophosphates and both groups of pesticides have been reported to have endocrine disrupter effects.

ISO/TR 16178:2010 developed the following list of pesticides that might be present in leather.

Table 7 Pesticides in leather following ISO/TR 16178:2010

Substances	CAS	Substances	CAS
DDT op	789-02-6	Dieldrine	60-57-1
DDT pp	50-29-3	Ethylparathione	56-38-2
DDD op	72-54-8	Endosulfanes	
DDD pp	72-55-9	Mirex	2385-85-5
DDE		Dichlofluanide	1085-98-9
HCH's without Lindane		Heptachloroepoxide	93-76-5
Lindane	58-89-9	Pentachloroanisole	1825-21-4
Malathione	121-75-5	Permethrine	52645-53-1
Methoxychlor	72-43-5	Tolyfluanide	731-27-1
Aldrine	309-00-2	Chlorthalonii	1897-45-6

Best practices identified

European sourced hides are unlikely to be contaminated by banned pesticides[48]. Some prohibited substances, notably organochlorine compounds, are stable enough to survive waste water treatment processes from tannery. The BAT indicates the application of prevention principle:

- to source hides and skins only from Europe and countries with similar regulatory regimes for pesticides; or
- to use supply chain contracts specifying that only hides or skins free from these materials shall be supplied.

According to the information gathered there is no official testing method to verify pesticides content in specific materials (or product), usually US EPA methods developed for water or soil are used for verification. Therefore, the lack of consistent methodology between different laboratories could cause uncertainties.

Proposal

1. It is suggested to rephrase the first part of the criterion on leather in order to clarify that the leather used should be a by-product of alimentary industry. The term '*Wild, endangered or vulnerable species*' will be removed from the criterion being replaced by "*threatened species*" to better reflect the criterion intention. This change responds to stakeholders feedback on sustainable raising of wild animals.
2. In alignment with EU Ecolabel for textiles, it is suggested to keep organic cotton together with IPM cotton requirement and align the requirements with EU Ecolabel for textile criteria.

[48] BAT Reference Document for tanning of Hides and Skins. 2013. IPPC Bureau. JRC IPTS

3. Whereas for leather and materials derived from forestry, it is suggested to set a min % w/w content to require the demonstration of compliance with the criterion. Three options are proposed to be disucssed:
   - 80 % in alignment with the Footwear Labelling Directive 94/11/EC defining the minimum content for which the information on the material shall be provided;
   - 40% as proposed by some stakeholders and introduced in criterion proposal;
   - 5% as in the latest proposal for the EU Ecolabel bed mattresses.
   - This content should then be discussed with stakeholders.
4. Independently on the introduced material content threshold, it is suggested to make a separation between the upper, lining and sock on one hand, and the sole on the other hand, in line with the Footwear Labelling Directive 94/11/EC.
5. Regarding the verification of possible pesticides content, the prevention approach is proposed in line with indications of BREF for Tanning of Hides and Skins (2013). The preliminary check with industry shows that the complexity of the leather supply chain might hinder the verification feasibility. Therefore the assessement and verification proposed should be further cross checked.

Question:

1. What should be the minimum content of each material for the related criterion to be applicable?
2. Which is the level of possible verification of leather contamination with pesticides by the footwear manufacturer?
3. Does the list of pesticides ISO/TR 16178 reflect substances of possible presence in hides and skins?
4. Should preventive approach according to BAT indication be applied to ensure no use of pesticides treated leather.
5. Should specific verification of pesticides content in latex be introduced?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

1. The approach to improve material traceability was supported but also considered as costly therefore leading to an increase in the overall price of material. The leather industry was considered as very complex for full traceability to be achieved.

2. Pesticides are applied on an individual animal therefore the possible tracing back by footwear manufacturer was assumed as very complicated and impractical. Other stakeholders stated that the possible pesticides content in leather is doubtful and unnecessary testing should be avoided.

3. The reference to the Red List was required to be specified to improve requirement's clarity.

4. The proposal to introduce cut-off limit for the specific materials covered by the criterion was extensively discussed by experts. The majority of stakeholders were in favour to maintain the general cut-off limit of 3% for the criteria set, and ensuring coherency between requirements. A 40% cut-off limit was generally assumed as too high and confusing.

5. Several stakeholders raised the proposal according to which cotton used in footwear should

be 100% organic. In this case the test on pesticides would not be necessary. Furthermore, it was proposed to align cotton criterion with EU Ecolabel criteria for textile, thus introducing specific requirements for children products.

6. It was proposed to change the % w/w content of certified timber products harmonizing the criterion with recently voted product groups. The separation of timber and non-timber products was proposed to reflect the current market segmentation.

7. Requirements for wool fabrics used in footwear was proposed.

8. Criterion that refers to the use of recycling material was proposed.

Follow up research and proposals

I. Threshold

The criterion aims at establishing the base for supply chain control and management. According to the industry estimates, materials/components weighing less than 10% are not representative for the total product. The complexity of the supply chain should also be taken into account. The introduction of the specific cut-off limit aims at finding the right balance between possible environmental benefits and additional administrative burdens. The revised threshold proposal of 10% w/w for traceability of specified materials is aligned with Blue Angel criteria for Footwear and reflects the main feedback received.

II. Leather origin

The wording of the Criterion 1(a) was adapted to the classification hierarchy set by the Red List:

- *Extinct, EX:* A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual.
- *Extinct in the Wild*: A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual.
- *Critically Endangered, CR*, taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria for Critically Endangered (see and it is therefore considered to be facing an extremely high risk of extinction in the wild.
- *Endangered, EN*: A taxon is Endangered when the best available evidence indicates that it meets criteria to be considered as facing a very high risk of extinction in the wild.
- *Vulnerable, VU*: A taxon is Vulnerable when the best available evidence meets any of the criteria to be considered as facing a high risk of extinction in the wild.
- *Near Threatened, NT*: it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

- *Least Concern, LC:* it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

- *Data Deficient, DD:* Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate

- *Not Evaluated, NE*: A taxon is Not Evaluated when it has not yet been evaluated against the criteria.

The species that are categorized by the Red List to be at any type of risk of extinction shall not be used in the EU Eco-labelled footwear. It should be stated that according to the information set up in the Preliminary Background Report[49], 71% of total world skin production originates from bovine hides, followed by sheepskins (14%), goat skins (8%) and calfskins (6%)[50]. The remaining animal skins principally reptiles, deer, covers a small part of the industry (less than 1 %) and could be considered as a niche market[51].

III. *Restriction on the use of chromium tanned leather linings intended for children under 3 years old.*

The European Commission (EC) has issued a new Regulation (EU) No 301/2014 that amends Annex XVII of Regulation (EC) 1907/2006 (REACH) by adding new chemical requirements for Chromium VI compounds in leather articles. The restriction was proposed by Denmark since Chromium VI in leather articles can produce allergic contact dermatitis. This Regulation will apply from 1st May 2015.

There is a wide variety of tanning methods. The choice of tanning technology depends on the required properties of the finished leather, cost of the materials, and the type of raw material. The majority of tanning agents fall into one of the following groups:

- mineral tannages;
- vegetable tannins;
- syntans;
- aldehydes;
- oil tannages.

The most commonly used tanning agent is basic chromium sulphate ($Cr(OH)SO_4$). A high proportion (80 – 90 %) of all the leather produced today is tanned using chromium (III) salts. Following the opinion of the ECHA Committees for Risk Assessment (RAC) it was agreed that a viable substitute for chrome-containing shoe leathers may not be available at the moment. The current market situation clearly indicates the need to accommodate all available tanning methods under the revised EU Ecolabel criteria for Footwear.

The International ISO Standard ISO 17075 is a commonly accepted and economically competitive method that determines Cr(VI) content in all types of leather in concentration of 3 mg/kg (3 ppm) or higher. The threshold limit for causing Cr(VI) allergy might be lower than the detection limit of

[49] http://susproc.jrc.ec.europa.eu/footwear/docs/EU_Ecolabel_Footwear_%20Background%20Report.pdf
[50] FAO. (2011). World statistical compendium for raw hides and skins, leather and leather footwear.
[51] COTANCE. (2012). Social and Environmental Report - the European leather industry.

the analytical method[52]. The knowledge of the possible risk to develop allergenic reaction against might be lower for children. Atopic dermatitis is also most common in infants. It may start as early as at age 2 to 6 months. Many people outgrow it by early adulthood[53]. It is estimated, on the basis of the available data, that 0.2-0.7% of the population in the EU are allergic to chromium VI corresponding to approximately one to three million people[54] .

Considering the market segmentation, on the base of precautionary principle it is proposed to introduce requirement on the use of non-chromium tanned leather in linings and socks (interior parts) in footwear intended for children under 3 years old. Chromium – free leather ("*chrome-free leather*") is defined in EN 15987:2011[55] as the leather that contains less than 0.1% Cr on dry weight of leather. The requirements to verify (Test method: ISO 17075) no-presence of Cr (VI) in leather used in EU Ecolabel footwear are established under Criterion 7 (Restricted Substance List).

The criterion intends to stimulate the development of the non-chromium tanning technologies in general, without indication of the specific method.

IV. Pesticides testing

Constrains identified

- There is no official testing method for raw leather; usually US EPA methods developed for water or soil are used to check the pesticides content. The lack of consistent methodology between different laboratories could cause uncertainties.
- Restriction on pesticides content does not refer to finished leather. The test against pesticides should be done before the processing of raw leather, as the pesticides are generally washed out during wet-processing (tanning).
- Capacity of SMEs to trace back veterinary treatment of livestock is assessed as limited.
- The possible presence of restricted pesticides will depend on the regulatory regimes of the country of the origin of livestock. Cross-check with leather industry confirmed limited probability of pesticides presence in leather.

The criterion was withdrawn following the feedback after the 2nd AHWG Meeting and subsequent consultation process.

V. Wood and cork certification

- It was proposed to introduce a separate criterion for timber (wood) and non-timber products (cork, rubber).
- The criterion was harmonised with recently voted EU Ecolabel product groups. The requirement on the at least 70% w/w content of certified material was introduced accordingly.

[52] Danish Ministry of Environment. Environmental Protection Agency. (2011). Survey and health assessment (sensitisation only) of chromium in leather shoes. Survey of Chemical Substances in Consumer Products No. 112 2011
[53] U.S. National Library of Medicine: http://www.nlm.nih.gov/medlineplus/ency/article/000853.htm
[54] http://echa.europa.eu/documents/10162/13641/information_note_cr_vi_en.pdf
[55] Leather - Terminology - Key definitions for the leather trade

- Separated research was conducted regarding the certification of cork. The possible use of recycled cork was also analysed:

In several industrial sectors the responsible sourcing of timber has been successfully regulated by certification schemes such as FSC and PEFC which set requirements for the sustainable management of forestry and require third party verification of the chain of custody for timber products. Comparisons suggest that the FSC and PEFC certification schemes provide a high level of assurance in their verification of the chain of custody.[56] By May 2012, the global area of certified forest was 394 million hectares, a 4% increase since May 2011. Almost all the recent growth in certified area is in the CIS sub-region, primarily in the Russian Federation. In 2012, these schemes accounted for 9.6% of global forestry and 26.5% of industrial timber supplies[57].

Cork

Cork oak occupies worldwide approx. 2277 thousand hectares, 55% out of which is located in the Iberian Peninsula. The production of cork worldwide is about 300 thousand tonnes, more than 80% of which is produced in the Iberian Peninsula[58]. Following the information gathered[59], in 2013 in Portugal and Spain there were 84,000 and 142 oak forests covered by the PEFC and FSC certification scheme, respectively, representing together 58 cork-based industries with Chain of Custody certification (both PEFC and FSC).

The primary usage of natural cork is for wine stoppers. Approximately 70% of all the cork harvested is used in the wine industry. The solid corks are "punched" out of the bark, once the corks have been produced, the residual pieces of bark can be redirected produce other agglomerated products. Most of the companies use hash by products from the manufacture of the cork stoppers[60].

According to Rives et al.[61] the by-products represent in mass more than 70% of the initial raw cork. At this time there are a few natural wine cork recycling programs in the EU or the US. Cork ReHarvest organization operates the largest cork recycling program in North America. Last year, (2013) over 80 tons of natural cork was collected within the programme[62].

According to the information gathered, footwear manufacturers may allocate the proportion of "certified material" in the products to be included in the “EU Ecolabel” fulfilling maximum ratio of 30% for non-certified material. In this case, the company can apply the percentage method of its Chain of Custody, the so called "Volume Credit Method" and adapt smoothly to the maximum percentage required for non-certified, regardless its overall percentage of certified raw material entries. The companies working with mixtures of wood, cork, paper pulp, etc. were assumed to be used to work with that requirement.

Considering the flexible market share it is proposed to align the requirement on the certified cork and wood content.

V. Natural rubber certification

[56]CPET, UK Government timber procurement policy – definition of legal and sustainable for timber procurement. April 2010
[57] UNECE and FAO (2010) Forest products annual market review 2011-2012
[58] APCOR yearbook 2009 (2009) http://www.apcor.pt(01-02-2010)
[59] Personal communication
[60]Personal communication with Cork Forest Conservation Alliance: http://www.corkforest.org/
[61] Rives et al. (2011) Environmental analysis of the production of natural cork stoppers in southern Europe (Catalonia – Spain). Journal of Cleaner Production 19 (2–3), pp 259–271
[62] Personal communication with Cork Forest Conservation Alliance: http://www.corkforest.org/

Natural rubber (NR) is tapped from rubber trees (*Hevea brasiliensis*) as latex. The trees are grown on plantations in Southeast Asia and other parts of the world. 85 % of rubber agroforests are managed by smallholders[63], and are characterised by a low high industry fragmentation. Asia accounted for over 90% of the 11.4 million tonnes produced globally in 2012. Production was concentrated in Thailand, Indonesia, Malaysia, and Vietnam, which together are responsible for 82% of global production and about 87% of global natural rubber export volume[64]. Two-thirds of global demand[65] and almost 90% of the Indonesian production is absorbed by tire manufacturers[66,67]. In 2009, global natural rubber latex consumption was 1.2 million tons; in 2010, 9 percent lower. The European Union is the second biggest consumer of NR (1.3 million tonnes in 2009) after China (3.6 million tonnes).[68]

At present there is a limited market share for eco-certified NR. Usually the plantation systems are being certified, and that the product gets a certification/label that it originates from a source that is managed in accordance with the principles of the certification scheme[69]. Several studies indicated the potential for existing environmental standards such as FSC, Rainforest Alliance, Organic (such as IFOAM), Lembaga Ekolabel Indonesia (LEI) and the Analog Forestry Network (IAFN) to address rubber cultivation and production[70]. Global Organic Latex Standard (GOLS) was developed by the international certification body Control Union in 2012, GOLS is a newly introduced standard for sustainable processing methods of latex products from organic raw materials. Products carrying the GOLS label must contain no less than 95% organic latex of its total weight.[71]

In May 2013, the International Rubber Study Group (IRSG)[72] established "Sustainable Natural Rubber Action Plan" that aims at promoting a common set of voluntary rubber sustainability standards within highly fragmented industry (IRSG 2013). Nevertheless, industry-level interest in environmental standards for natural rubber is a relatively recent development[73]. The Malaysian Timber Certification Scheme (MTCS) has become the first tropical timber certification scheme in the Asia Pacific region, and the second in the world after the Gabonese Forest Certification Scheme, to be endorsed by the Programme for the Endorsement of Forest Certification schemes (PEFC)[74]. In 2009, 4.5 million hectares of Malaysia's Permanent Reserved Forests (34%), out of a total area of 13.4 million hectares, have been certified mainly under the Malaysian Timber Certification Scheme (MTCS)[75]

Whilst the proportion of rubber plantations covered by certification schemes market is still relatively low they are considered by the FAO an independent research to have played an important role in influencing forestry practices and in raising awareness of the threat to global forests.

[63] http://blogs.wsj.com/searealtime/2013/09/03/rubber-study-group-looks-for-sustainability-plan/
[64] Kennedy, SF (2014) From certification outcomes to certification processes: Demand, supply and adoption of eco-certification along the natural rubber supply chain. University of California.
[65] The Freedonia Group. 2012. "World Rubber: Industry Study with Forecasts for 2015 & 2020". Cleveland,
[66] Gouyon A. (2003) Eco-Certification as an Incentive to Conserve Biodiversity in Rubber Smallholder Agroforestry Systems: A Preliminary Study. World Agroforestry Centre.
[67] http://blogs.wsj.com/searealtime/2013/09/03/rubber-study-group-looks-for-sustainability-plan/
[68] Brentin, R. and Sarnacke P. (2011) Rubber compounds. A market opportunity study.
[69] van den Beemt, R. 2011. Potentials and pitfalls of upgrading rubber agroforests through eco-certification. International Development Studies. University of Amsterdam
[70] van den Beemt, R. 2011. Potentials and pitfalls of upgrading rubber agroforests through eco-certification. International Development Studies. University of Amsterdam
[71] http://certification.controlunion.com/publications.aspx?Program_ID=101
[72] http://www.rubberstudy.com/
[73] van den Beemt, R. 2011. Potentials and pitfalls of upgrading rubber agroforests through eco-certification. International Development Studies. University of Amsterdam
[74]http://www.mtcc.com.my/news-items/pefc-endorsement-of-the-malaysian-timber-certification-scheme-mtcs
[75] http://www.mtcc.com.my/wp-content/uploads/2013/01/Annual-Report-2009.pdf

Having in mind the need to stimulate the market for certified rubber, it is proposed to introduce the requirement that the material is sourced from a responsibly managed plantation covered by valid sustainable forest management and chain of custody, or comes from the fairly traded rubber supplier that meets requirements of the respective certification schemes.

VI. Man-made cellulose fibres

Viscose fibres are made from regenerated cellulose pulps. Timber and bamboo are the predominant sources of raw material for cellulose fibre manufacturing. This cellulose may be derived from a range of different sources, including timber, bamboo and, increasingly in China cotton pulp. Over the last decade production of viscose fibres stabilised at approximately 2.6 million tonnes world-wide (Europe : 600 thousand tons) but has recently risen sharply again to 5.5 million tonnes because of the increase in the price of cotton[76] The pulp required to manufacture viscose fibres is a specialised grade called dissolving pulp.

With the growth of viscose production in countries such as China concerns have risen about the possible extent of deforestation in order to supply cellulose pulp feedstock. A review of publicly available information from the major producers suggests that at least 14.5% of capacity may be certified to either FSC or PEFC. As reflected in the Technical Report supporting the EU Ecolabel revision for Textile[77] no reliable market data is currently available for the quantity of certified dissolving pulp. Consultation with the only current EU license holder confirmed that certified market dissolving pulp can be obtained but that the maximum possible to be achieved would be 50% certified fibre content. Wider consultation by CIRFS with EU producers suggested 25%. Given that proportion of feedstock may be sourced from countries where the availability of certified timber is lower and where there may be greater concerns about illegal forestry[78], there is a clear justification for seeking sustainable certification of dissolving pulp and restriction of illegal sources.

In line with EU Ecolabel criteria for Textile[79] it is proposed to established requirement for evidence of responsible sourcing for viscose fibres. The requirement is proposed to be harmonised with the EU Ecolabel criteria for textile.

VII. Materials in the final product

The Criterion 1 is mainly intended to improve traceability and supply chain management for natural materials (origin of materials). Synthetic materials are mainly addressed in respect to their chemical performance. It also takes into consideration the diversity, and complexity of production process of synthetic materials and possible verification burdens.

[76] Asia Paper Markets, Commodities to watch – dissolving pulp, Market briefing paper, February 2001)
[77] http://susproc.jrc.ec.europa.eu/textiles/docs/131021%20Ecolabel%20Textiles_EUEB%20vote_Technical%20report%20final.pdf
[78] Goetzl, A (2006) Wood for paper: fibre sourcing in the global pulp and paper industry, Presentation made to 'Forestry trends Potomac Forum' 14th February 2008
[79] As established in the Commisssion Decision 2014/350/EU

2.3.2 CRITERION 2: Reduction of water consumption

Main proposed changes

The threshold values for the water consumed during leather manufacturing were revised. Clear relation to Commission Implementing Decision 2013/84/EU was established[80]. Information received from the current EU Ecolabel for Footwear licences were integrated into criterion proposal.

Present criterion, Decision 2009/563/EC
The following limits to water consumption for the tanning of hide and skin shall not be exceeded: — Hides: 35 m^3/t, — Skins: 55 m^3/t, Assessment and verification: the applicant and/or his supplier(s) shall provide appropriate documentation that the mentioned limits have not been exceeded.
Suggested criterion, October 2103
Proposal 1 (a): The following limits to water consumption for the tanning of hide and skin shall not be exceeded: — Hides: xx m^3/t, — Skins: xx m^3/t, ~~Proposal: 2 (b) The limits to water consumption for the processing of textiles should fulfil the requirement of the EU Ecolabel for textile criteria:~~ ~~*— finishing of yarn: 70 l/kg*~~ ~~*— finishing of knitted fabric: 70 l/kg*~~ ~~*— finishing of woven fabric consisting mainly of cellulosic fibres: 200 l/kg*~~ ~~*— finishing of woven fabric consisting mainly of wool: 250 l/kg*~~ Assessment and verification: the applicant and/or his supplier(s) shall provide appropriate documentation that the referenced limits have not been exceeded.
Suggested criterion, May 2014
The following limits to water consumption for the tanning of hides and skins based on the monthly average values during twelve months before the application measured by waste water discharge shall not be exceeded: — Hides: 28 m^3/t, — Salted hides: 45 m^3/t, — Sheepskins: 180 litres/skin Assessment and verification: The applicant, leather supplier or leather manufacturing company shall provide appropriate documentation that the referenced limits have not been exceeded. Documentation should include information on the annual leather production and related water usage based on the monthly average values during twelve months. The data should refer to the entire tanning process. If leather production process is conducted in different geographical location, the supplier of semi-finished leather should provide information on the quantity of water used (l) for the quantity of semi-finished leather produced (tonnes) based on the monthly average values during twelve months.
Proposed criterion, November 2014
Water consumption expressed as annual average volume of water consumed per tonne of raw leather for the tanning of hides and skins shall not exceed the limits given in Table 1. **Table 1 Water consumption in tanning processes**

[80] OJ L 45, 16.2.2013, p. 13–29

Hides	28 m^3/t
Skins	45 m^3/t
Vegetable tanned leather in pits	35 m^3/t
Pig skin	80 m^3/t
Calfskin	40 m^3/t
Sheepskins	180 l/skin

Water consumption shall be calculated based on the monthly average values of the last twelve months before the application and measured by waste water discharge.

***Assessment and verification**: the applicant shall provide declaration of compliance with the criterion and relevant declaration, where appropriate, by the leather supplier or leather manufacturing company. In the declaration shall be specified the annual amount of leather production and related water consumption based on the monthly average values of the last twelve months preceding the application, measured by the quantity of waste water discharge.*
If the leather production process is conducted in different geographical locations, the applicant or pre-supplier of semi-finished leather shall provide documentation that specifies the quantity of water discharged (m^3) for the quantity of semi-finished leather produced (tonnes) or number of skins for sheepskin, as appropriate, based on the monthly average values during twelve months, measured by the quantity of waste water discharge.

The supportive data used in the proof of compliance shall refer to the entire tanning process.

AHWG1 technical discussions

A range of studies, including the Intergovernmental Panel on Climate Change 2008 Climate Change and Water Report, have concluded that climate change is likely to further exacerbate water scarcity.[81] Many businesses fail to recognize water demands embedded across their supply chain. For example, water supply risks are often hidden in companies' raw material inputs or in the inputs of intermediate suppliers[82]. Following highlights of the specific LCA analysis conducted under Task 3 of the Preliminary Report, some parts of the footwear production value chain can be water-intensive, considering that the major water consumption hotspots were identified as the production of input materials, in particular textiles and leather, more specifically textile finishing and leather production.

For textiles processing, water consumption is particularly sensitive for the dyeing and printing processes and will depend on the character of fibre to be treated. Consumption is especially high in batch dyeing for rinsing batches (BREF Textiles Industry, 2003). Water is also consumed for cleaning the equipment in the printing processes.

For these two production stages, the BREFs "Textile industry" and "Tanning of hides and skins" describe detailed environmentally-friendly techniques which establish the best available techniques emissions levels for processing of textiles and leather, as outlined in the improvement potential analysis of the Preliminary background report.

[81] Bates, B.C. , Kundzewicz, Z.W., Wu, S. Palutikof, . J.P (Eds.). 2008. Climate Change and Water," Technical Paper VI of the Intergovernmental Panel on Climate Change, IPCC Secretariat, Geneva,
[82]Barton, B. 2010. CERES Report.. Murky Waters? Corporate Reporting on Water Risk. A Benchmarking Study of 100 Companies . http://www.ceres.org/resources/reports/corporate-reporting-on-water-risk-2010. Last check August 2013

Water consumption during tanning of hides and skins consists of two main components: process water and technical water needed for cleaning, energy generation, waste water treatment and sanitary purposes. The average water consumption in modern tanneries can be reduced from 40 - 50 m^3/tonne raw hides/skins to 12 – 30 m^3/tonne for bovine hides/skins, if the tannery has effective control of its processes. More water is required in the tanning of calfskin, approx. 34-40 m^3/tonne.

From the other side, according to information found in the COTANCE Sustainability Report (COTANCE, 2012), the average water consumption for the production of a leather unit in Europe was 0.13 m^3 per m^2 of leather between 2010 and 2011.

According to Nordic Eco labelling for textile, hides/skins and leather[83] background document there is a high level of data variability received in connection with licencing in relation to textile material. For example, water consumption during the treatment of cotton varies between 8 l/kg textile and 204 l/kg textile. Different levels of water consumption in relation to technology used within dying process were also observed, therefore without setting a specific limit, the water consumption (in litres) for textile wet treatment and finishing should be reported. The Blue Angel within footwear Ecolabel criteria does not set specific limits for water consumption in textiles manufacturing. Analysis of the feasibility of establishing such an approach, considering its possible alignment with EU Ecolabel for textile, will require further analysis and stakeholder dialogue.

The Leather Working Group classifies as good the range of water usage 19.4-36.1 m^3/tonne of raw hide. Nordic Ecolabelling has chosen to set the requirement at 25m^3 water/tonne hides/skins and leather that is treated. The water consumption threshold is defined by the Blue Angel for leather manufacturing according to following categorization:

- 25 m^3/t for raw skins of cattle,
- 45 m^3/t for hides of calves, goats and kangaroos,
- 80 m^3/t for skins of pigs and
- 120 m^3/t for hides of sheep.

The majority of stakeholders (approx. 75%) indicated that it may be feasible to establish a limit for water consumption for materials or production stages other than leather. They also highlighted the importance of introducing a fair assessment approach among the different materials. However, it should be stated that the water consumption is not equally relevant among the main component materials identified for footwear manufacturing. Therefore, no water consumption limit values have been proposed for production of materials other than leather or textile (subject to stakeholder feedback) considering that:

- The relevance of water consumption during leather and textile processing has been highlighted through LCA;
- Other Ecolabels (Blue Angel, Nordic Swan, The New Zealand Ecolabelling Trust, and Japanese EcoMark) do not set such limits;
- The emissions levels in the BREF for polymers are way lower than the ones for textiles and leather. According to (BREF for Polymers, 2007), that water consumption is on average between 1 and 3 m^3/tonne for many polymers.

For the EU Ecolabel Footwear, the proposal is to set limits on water consumptions based on BAT from the BREF documents (for Tanning and for Textiles), presented in 0. A minimum BAT value for water consumption in hides processing is proposed, but this will be discussed with stakeholders if

[83] Nordic Ecolabelled textiles, hides/skins and leather - Background for ecolabelling . 2013.

an average or the maximum value is more appropriate to allow the targeted 10-20% of the market to comply with such a requirement.

Additionally, one stakeholder suggested using the tool provided by the Water Footprint Network[84] to calculate the water consumption. This tool is accurate and takes into account the geography and the scarcity of water.

The Water Footprint Assessment (WFA) Tool guides users through the four steps of Water Footprint Assessment: Goal and Scope, Accounting, Sustainability Assessment and Response Strategy Formulation. The scope of the WFA defines the spatial and temporal scale of the study; for example, will the focus of the assessment be global or for a single catchment; for one year or multiple years; include some or all of the value chain; address one product or a facility, or an entire company? The goal and scope step of the WFA indicates what data will be used, how each subsequent step of the WFA will be approached and the rigor needed in the assessment. With the goal and scope of the Water Footprint Assessment defined, the data are collected to calculate the footprint of the relevant processes for the study. These data may come from global databases. The sustainability step of Water Footprint Assessment asks two key questions: "Is the water footprint in a hotspot?" and "Could the water footprint be reduced or avoided all together for reasonable cost?" Using the information gained in the accounting and sustainability assessment steps of Water Footprint Assessment, response strategies that reduce the water footprint and improve its sustainability can be prioritized for implementation. The feasibility to introduce such approach should be discussed with stakeholders.

AHWG1 stakeholder feedback

Some stakeholder stated that tanneries tend to achieve economic efficiency thus reducing the water consumption and waste water discharge. Further reduction of water consumption was also perceived as the possible constrains for the market penetration of the EU Ecolabel for Footwear. The quantity of water consumed should be adjusted to the process requirement.

Other stakeholders suggested further update of the quantity of water consumed. Following reference values were provided:

- Hides 33.8 m^3/t; Skins: 44,61 m^3/t – average data from the EU Ecolabel application forms of one Member State;
- Sole vegetable-tanned in pits: 35m^3/t; for other kinds of sole leather: 55 m^3/t without further classification in accordance with the animal origin or leather size.

Another stakeholder suggested that BAT values calculation methods should be specified, taking into consideration different approaches to waste water handling, some of them being more visionary and closed-loop.

One stakeholder specifically supported the proposal not to set water consumption limit value for polymers.

Stakeholder supported the proposal that wastewater discharge form textile processing shall comply with the criterion for the EU Ecolabel for Textile.

[84] http://www.waterfootprint.org/

Follow-up research

BAT for Tanning specifies the technique to use in order to minimise water consumption[85]:

Technique	Description	Applicability
The optimisation of water use in all wet process steps, including the use of batch washing instead of running water washes	Determining the optimum quantity of water required for each process step and introduce the correct quantity using measuring equipment: Batch washing of hides and skins during processing by introducing the required quantity of clean water into the processing vessel and using the action of vessel to achieve the required agitation, as opposed to running water washes which use the inflow and outflow of large quantities of water	Applies to all plants carrying out wet processing
The use of short floats	Short floats are reduced amounts of process water in proportion to the amount of hides or skins being processed as compared to traditional practices. There is a lower limit to this reduction because the water also functions as a lubricant and coolant for the hides or skins during processing. The rotation of process vessels containing a limited amount of water requires more robust geared drives.	This technique cannot be applied in the dying process step and for the processing of calfskins. Applicability is also limited to: - new processing vessels; - existing processing vessels that allow the use of, or can be modified to use, short floats

1. In reference to ISO 15987, many different terms are used to qualify the leather regarding the type of grain, the type of tanning, and the type of finishing. BREF for Tanning of Hides and Skins (2013) defines "hides" and "skins" as follows:
   - Hides: the pelts of large animals, such as cattle or horses.
   - Skin: the pelt of a small animal, such as calf, pig or sheep.
2. The Commission Implementing Decision 2013/84/EU established the relation between the leather origin (animal type) and the quantity of water consumed.[86]
3. The water consumption levels given in the BAT are the ones measured by waste water discharges (BREF for Tanning of Hides and Skins, 2013).
4. There are few data available on the levels to which water use in the processing of sheepskins can be reduced by good practice. BAT-associated water consumption levels are between 110-180 litres/skin for sheepskin, considering that wool-on sheepskins may require a higher water consumption. Blue Angel specifies water consumption level for sheepskin as 120 m3/t of skin.
5. The EU Ecolabel for textiles does not introduce any limits on water consumption.. However, it refers to some best available techniques (Textile BREF 2003):
   - Water and liquor re-use/recycling in batch processes
   - Use of cooling water as process water
   - Use of 'smart' rinsing technologies with water flow controls and counter currents

Proposals

1. In reference to technical discussion and stakeholder feedback, it is suggested to apply BAT-associated water consumption levels. In this sense, the BAT-associated consumption level of water for bovine hides/skins is between 16-25, and 19-28 m^3/tonnes raw hides for unsalted and salted hides, respectively.

[85] O.J. L 45/20 16.2.2013

[86] Commission Implementing Decision of 11 February 2013 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the tanning of hides and skins. O.J. L 45/20 16.2.2013

2. A separated requirement for sheepskins is proposed to be introduced. BAT-associated values refer to water consumption per skin. Blue Angel specifies water consumption level for sheepskin as 120 m^3/t of skin. It is proposed to refer to BAT-associated value. The possibility to align the requirement with Blue Angel criteria should be further discussed.
3. BAT-associated consumption levels do not specify values of water consumption for skins. It is therefore proposed to refer to information received from license holders, and requirements set in Blue Angel for Footwear, supported by additional information analysed in BREF for Tanning of Hides and Skins (2013).
4. To ensure constancy of best practices application during hides and skins processing, it is proposed to report the average monthly data referring to the 12 months period of time before the application.
5. Not to introduce any limits for the production of textiles, in alignment with the EU Ecolabel for textiles. It is to be analysed within stakeholders consultation process if, in line with EU Ecolabel for textile, specific Appendix should be introduced in the criteria document:

- Water and liquor re-use/recycling in batch processes
- Use of cooling water as process water
- Use of 'smart' rinsing technologies with water flow controls and counter currents

Questions

- Is it possible to collect data regarding total quantity of water consumption used during leather processing?
- Should a specific requirement for water consumption during sheepskin processing be introduced? If yes, should it refer to the water consumption per unit of skin, in line with BAT associated values?
- Are the proposed revised limit values and verification procedure acceptable and realistic?
- Should specific Appendix for BAT techniques used in reduction of water consumption be introduced in line with EU Ecolabel for textile?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- The use of data gathered from EU Ecolabel for footwear license holders to set proposal on water consumption during skin processing was perceived as the right approach. It was however stated that AELs-BAT water consumption value of 28m^3/tonne of hides was not achievable for some of the current license holders.
- The proposal was set to add a requirement for vegetable tanned leather - allowing higher water consumption of 35 m^3/tonne of skin as reflected in BREF document. Blue Angel criteria for footwear were referred in respect to water consumption requirement for pig skins.
- The need to set a specific requirement for calfskin processing was reported by industry stakeholder. The increase in water consumption for calfskin processing is also reflected in the Commission Implementing Decision 2013/84/EU.
- The question of equality between different materials was raised. It was proposed to set requirement on water consumption threshold for textile.

Follow up and proposals:

Leather

Specific requirement on water consumption for vegetable tanned leather was added following the stakeholders feedback. The value of 35 m^3/t is applicable to "vegetal" leather tanned in pits[87]. "Vegetal" leather tanned in drums requires the same amount of water than the other tanning processes (chromium, synthetic etc). Vegetable tanning in a drum produces softer and more flexible leather than in a pit[88]. Drum tanning can be carried out using very short floats; this system allows the vegetable tanning agents to penetrate the leathers more quickly, reducing the overall tanning time. Drum processes for sole leathers are designed to be closed systems, so that very little waste liquor is discharged.

Within the revised criterion proposal it is suggested to align the requirements on the water consumption threshold according to animal typology, in line with the Commission Implementing Decision 2013/84/EU[89].

A water consumption of approximately 12 – 25 m^3/t (for bovine hides) can be achieved if the tannery operates efficient technical control and good housekeeping. The economic feasibility of a change in consumption to this level depends greatly on the cost of water consumption. Some tanneries use 15 – 20 m^3/t. During the consultation process it was emphasised that processing of calfskin is related to the increase in water consumption. BREF for Tanning of Hides and Skins specifies that for the processing of calfskins, about 40 m^3/t and sometimes more is needed[90]. The specific threshold for the water used for calfskin processing was introduced accordingly.

Sheepskins generally require more water in wet processing than hides, because of the nature of the wool. One sheep skin weighs 1–6 kg corresponding to the water consumption range 30-180 m^3/tonne. Water consumption AELs-BAT value is 180 l/sheep skin[91]. It is therefore proposed to maintain the limit value for sheep skin per unit (skin).

According to data collected from operating European tanneries in 2008 and 2011 processing of pig skin required 85 m^3/tonne of skin. Blue Angel for Footwear refers to 80 m^3/tonne. It is therefore proposed to align EU Ecolabel requirement with Blue Angel for Footwear.

Furthermore, the wording was adapted to specify that criterion refers to water consumption during the entire tanning process, measured by the waste water discharge. The quantity of discharged waste water was considered as viable to be monitored and quantified. This approach also gives priority to these sites that recirculate water within different process stages.

Textile

Difficulties to gather relevant information on water consumption during textile processing were previously reflected. The criteria revision target mutual recognition with EU Ecolabel for textile which does not introduce any specific threshold per type of fibre. As stated in the Background report cotton was identified as one of the main fibre used in the footwear product, associated with

[87] CEN/TC 289/WG4/ Draft WI 00289154 Leather – Criteria defining the performance characteristics of leather with a low environmental impact
[88] BREF for Tanning of Hides and Skns, 2013
[89] OJ L 45, 16.02.2013, p. 13–29
[90] BREF for Tanning of Hides and Skns, 2013
[91] OJ L 45, 16.2.2013, p. 13–29

the use of agrochemicals and the resource impact of water use for irrigation. The criterion 1 (b) and requirement for the organic cotton addresses environmental performance of cotton.

The European labels of relevance do not set a threshold for water consumption within textile processing, mainly because of the large complexity of different processes that are applied in respect to the kind of fibre to be treated.

Polymers

The quantity of water consumed during polymer processing is lower than the amount for production of leather, consequently no requirement was introduced.

CRITERION 3: Emissions from the production of material

Major proposed changed

It is proposed to extend the list of materials being covered by the criterion to textiles and rubber, in addition to leather.

For textiles, the alignment with EU Ecolabel for textiles is proposed. For rubber the alignment with Blue Angel criteria for footwear is proposed. COD value is considered the key parameter to address industrial water quality. COD is assumed as the reliable parameter of a broad measure of the strength of the effluent.

Present criterion, Decision 2009/563/EC
(a) If the waste waters from leather tanning sites and from the textile industries are released directly into fresh waters the content of COD shall not exceed 250 mg COD/l of water discharged. If the waste waters from leather tanning sites are released into a municipal waste water treatment plant/facility, then this criterion shall not apply, as long as it can be demonstrated: - that the discharge of waste water from the tanning site into the municipal waste water supply is authorised and, - that the municipal waste water treatment facility is operational and that the subsequent discharge of treated water into the fresh water system is in line with minimum Community requirements according to Council Directive 91/271/EEC. Assessment and verification: the applicant shall provide a test report and complementary data, using the following test method: COD: ISO 6060 — Water quality, determination of chemical oxygen demand. Where the waste water is discharged into a municipal waste water treatment facility, documentation must be provided from the relevant authority showing that the discharge is authorised and that that municipal plant is operational and that it meets the minimum requirements of Directive 91/271/EEC. (b) Tannery waste water after treatment shall contain less than 1 mg Chromium (III)/l. Assessment and verification: the applicant shall provide a test report and complementary data, using the following test methods: ISO 9174 or EN 1233 or EN ISO 11885 for Cr
Suggested criterion, October 2013
(a) Waste water from leather tanning sites shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than xx mg/l, expressed as an annual average. Assessment and verification: The applicant shall provide detailed documentation and test reports, using ISO 6060, showing compliance with this criterion, together with a declaration of compliance. Assessment and verification: the applicant shall provide a test report and complementary data, using the following test method: COD: ISO 6060 — Water quality, determination of chemical oxygen demand. (b) Proposal 1: Wastewater discharge form textile processing shall comply with the criteria for the EU Ecolabel for textile. Wastewater discharges to the environment shall not exceed 20 g COD/kg textiles processing. This requirement shall apply to weaving, dyeing, printing and finishing processes used to manufacture the product(s). The requirement shall be measured downstream of on-site wastewater treatment plant and/or municipal wastewater treatment plant receiving wastewater from these processing sites. If colour removal is required, then the following spectral absorption coefficients shall be met: (i) 436 nm (yellow sector) 7 m-1 (ii) 525 nm (red sector) 5 m-1 (iii) 620 nm (blue sector) 3 m-1 Where used in dyeing processes, salt shall either be recycled or diluted so as to be less than xx mg/l in final discharges to the environment.

Assessment and verification: The applicant shall provide detailed documentation and test reports, using ISO 6060 and ISO 7887:2011 as relevant, and showing compliance with this criterion
If the effluent is treated on site and discharged directly to surface waters, it shall also meet the following requirements:
(i) pH between 6 and 9 (unless the pH of the receiving water is outside this range)
(ii) Temperature of less than 35°C (unless the temperature of the receiving water is above this value)
Assessment and verification: The applicant shall provide documentation and test reports showing compliance with this criterion, together with a declaration of compliance.
(c) Proposal 2: Waste water from processing of natural rubber and/or manufacturing of synthetic rubber sites shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than X g/kg, expressed as an annual average.
Assessment and verification: the applicant shall provide a test report and complementary data, using the following test method: COD: ISO 6060 — Water quality, determination of chemical oxygen demand.
(d) Proposal 3: If the waste waters from activities covered by Criterion 3 (a), (b) and (c) are released into a municipal waste water treatment plant/facility, then this criterion shall not apply, as long as it can be demonstrated that:

- the discharge of waste water from the site into the municipal waste water supply is authorised and,
- the municipal waste water treatment facility is operational and that the subsequent discharge of treated water into the fresh water system is in line with minimum Community requirements according to Council Directive 91/271/EEC.

(e) Tannery waste water after treatment shall contain less than x mg total Chromium.
Assessment and verification: the applicant shall provide a test report and complementary data, using the following test methods: ISO 9174 or EN 1233 or EN ISO 11885 for Cr.

Suggested criterion, May 2014

3(a) Waste water from leather tanning sites shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than 200 mg/l

Assessment and verification: the applicant shall provide detailed documentation and test reports, in accordance with ISO 6060 showing compliance with this criterion on the basis of monthly averages for the six months preceding the application, together with a declaration of compliance. The data shall demonstrate compliance by the production site or, if the effluent is treated off-site, by the wastewater treatment operator.

3(b) Wastewater discharges from textile weaving, dyeing, printing and finishing shall not exceed 20 g COD/kg textiles processing. This requirement shall apply to wet-processes used to manufacture the product(s). The requirement shall be measured downstream of on-site wastewater treatment plant and/or municipal wastewater treatment plant receiving wastewater from these processing sites.

If the effluent is treated on site and discharged directly to surface waters, it shall also meet the following requirements:
(i) pH between 6 and 9 (unless the pH of the receiving water is outside this range)
(ii) Temperature of lower than 35°C (unless the temperature of the receiving water is above this value)

If colour removal is required, then the following spectral absorption coefficients shall be met:
(i) 436 nm (yellow sector) 7 m-1
(ii) 525 nm (red sector) 5 m-1
(iii) 620 nm (blue sector) 3 m-1

Assessment and verification: the applicant shall provide detailed documentation and test reports, in accordance with ISO 6060 and ISO 7887 when relevant, and showing compliance with this criterion on the basis of monthly averages for the six months preceding the application, together with a declaration of compliance. The data shall demonstrate compliance by the production site or, if the effluent is treated off-site, by the wastewater treatment operator.

As proof of compliance to this requirements is also accepted the award of the EU Ecolabel for textiles when it is based on the EC Decision XX/XX/XXXX

3(c) Waste water from processing of natural rubber and/or manufacturing of synthetic rubber sites shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than 150 mg/l. This requirement shall apply to wet-processes used to manufacture the product(s).

Assessment and verification: the applicant shall provide detailed documentation and test reports, using ISO 6060, and showing compliance with this criterion on the basis of monthly averages for the six months preceding the application, together with a declaration of compliance. The data shall demonstrate compliance by the production site or, if the effluent is treated off-site, by the wastewater treatment operator.

3(d) If the waste water from activities covered by Criterion 3 (a), (b) and (c) are released into a municipal waste water treatment plant/facility, then then Criterion 3 (a), (b) and (c)shall not apply, as long as it can be demonstrated that:

(i) the discharge of waste water from the site into the municipal waste water treatment plant is authorised and,
(ii) the municipal waste water treatment facility is operational and that the subsequent discharge of treated water into the fresh water system is in line with minimum Community requirements according to Council Directive 91/271/EEC.

Assessment and verification: The applicant/or material supplier shall declare the compliance with the criterion supported by the documentation that proves the compliance with the criterion.

3(e) Tannery waste water after treatment shall contain less than 1 mg/l of total Chromium.

Assessment and verification: The applicant shall provide a test report in accordance with the following test methods: ISO 9174 or EN 1233 or EN ISO 11885 for Cr and showing compliance with this criterion on the basis of monthly averages for the six months preceding the application. The applicant should provide a declaration of compliance with BAT 11, and BAT 10 or 12 following Commission Implementing Decision 2013/84/EU[92] for the reduction of chromium content of waste water discharges should be accordingly demonstrated.

Suggested criterion, November2014

(a) Chemical oxygen demand (COD) in waste water from leather tanning sites

COD content of waste water from leather tanning sites, when discharged to surface waters after treatment (whether on-site or off-site), shall not exceed 200 mg /l.

Assessment and verification: the applicant shall provide detailed documentation and test reports in accordance with ISO 6060 showing compliance with this criterion on the basis of monthly averages for the six months preceding the application. The data shall demonstrate compliance of the

[92] OJ L 45, 16.2.2013, p.13

production site or, if the effluent is treated off-site, of the wastewater treatment operator.

(b) Chemical oxygen demand in waste water from textile weaving, dyeing, printing and finishing
For the textile part used in footwear the COD content in waste water discharges from textile weaving, dyeing, printing and finishing shall not exceed 20 g COD/kg textiles processing. This requirement shall apply to wet-processes used to manufacture the product(s). The requirement shall be measured downstream of on-site waste water treatment plant and/or municipal waste water treatment plant receiving waste water from these processing sites.
If the effluent is treated on site and discharged directly to surface waters, it shall also meet the following requirements:
(i) pH between 6 and 9 (unless the pH of the receiving water is outside this range)
(ii) Temperature of lower than 35°C (unless the temperature of the receiving water is above this value)
If colour removal is required, then the following spectral absorption coefficients shall be met:
(iii) 436 nm (yellow sector) 7 m^{-1}
(iv) 525 nm (red sector) 5 m^{-1}
(v) 620 nm (blue sector) 3 m^{-1}
Textile products that are awarded with the EU Ecolabel based on the ecological criteria of the Commission Decision 2014/350/EU comply with the Criterion 3a).

Assessment and verification: the applicant shall provide detailed documentation and test reports in accordance with ISO 6060 and ISO 7887, as appropriate, showing compliance with this criterion on the basis of monthly averages for the six months preceding the application. The data shall demonstrate compliance of the production site or, if the effluent is treated off-site, of the wastewater treatment operator.
In case of textiles that are awarded with the EU Ecolabel, the applicant shall demonstrate the compliance with the criterion by providing a copy of the EU Ecolabel certification with a proof that this was awarded in accordance with the Commission Decision 2014/350/EU.

(c) Chemical oxygen demand (COD) in waste water from processing of natural and synthetic rubber
COD content in waste water from processing of natural rubber or manufacturing of synthetic rubber sites, as applicable, when discharged to surface waters after treatment (whether on-site or off-site), shall not exceed 150 mg COD/l. This requirement shall apply to wet-processes used to manufacture the product(s).

Assessment and verification: the applicant shall provide detailed documentation and test reports, using ISO 6060, and showing compliance with this criterion on the basis of monthly averages for the six months preceding the application, together with a declaration of compliance. The data shall demonstrate compliance by the production site or, if the effluent is treated off-site, by the wastewater treatment operator.

~~*(d) Exemptions from the requirements set in the Criterion 3 (a), (b) and (c)*~~
~~Exemption from the requirements set in the criterion 3 (a), (b) and (c) applies if the waste water is released into a municipal waste water treatment plant/facility, as long as it can be demonstrated that:~~
~~(i) the discharge of waste water from the site into the municipal waste water treatment plant is authorised and,~~
~~(ii) the municipal waste water treatment facility is operational and that the subsequent discharge of treated water into the fresh water system is in line with minimum Community requirements according to Council Directive 91/271/EEC.~~

~~*Assessment and verification*: the applicant/or material supplier, as appropriate, shall provide documentation demonstrating the compliance with the criterion. For the product manufactured~~

~~outside the European Community, the compliance with regulatory requirements that apply to the treatment plant with the minimum Community requirements according 91/271/EEC shall be accordingly demonstrated.~~

(e) Chromium in tannery waste water after treatment
Total chromium concentration in tannery waste water after treatment shall not exceed 1 mg/l.

Assessment and verification: the applicant shall provide a test report of his supplier using the following test methods: ISO 9174 or EN 1233 or EN ISO 11885 for chromium and showing compliance with this criterion on the basis of monthly averages for the six months preceding the application. The applicant shall provide a declaration of compliance with BAT 11, and BAT 10 or 12 following Commission Implementing Decision 2013/84/EU[93] for the reduction of chromium content of waste water discharges.

.

AHWG1 technical discussions

One of the objectives of the EU Ecolabel revision is to address the main types of materials entering the production of footwear. Therefore, the current criterion has been expanded to include other materials. The five requirements of this criterion are explained below.

(a) For leather, the proposal is to use BAT values from the Commission Decision No 2013/84/EU on industrial emissions for the tanning of hides and skins, proposing as the starting point for the discussion the minimum value 200 mg/l COD based on the average of the 24-hour representative composite samples taken over a month (see 0).

(b) In order to search for synergy between different product groups, alignment with the EU Ecolabel for textiles is proposed. The latest version available and referenced here is the draft for consultation of the Commission Decision establishing the ecological criteria for award of the EU Ecolabel for textile products, published in May 2013.

It should be discussed with stakeholders whether other emissions than COD and chromium (in the case of leather) should also be considered and compared with with BAT emissions levels. Other schemes have been investigated and take into account different types of emissions, as indicated in Table 8.

Table 8: Water emissions levels - tanning of hides and skins

	BAT emissions levels[94]	**Blue Angel**	**Nordic Swan**	**Leather Working Group[95]**
COD	200-500[96] mg/l	250 mg/l	10 kg/t of raw hide	100 ppm
BOD5	15-25 mg/l			60 ppm

[93] OJ L 45, 16.2.2013, p.13
[94] From BREF for the Tanning of Hides and Skins. The values are monthly averages based on the average of the 24-hour representative composite samples taken over a month.
[95] The values referenced in the table are the limit values to get the best score possible on the parameter. Values are expressed in annual average emission.
[96] The upper level is associated with COD inlet concentrations higher than 8,000 mg/l

Total chromium	<0.3-1 mg/l	1 mg/l	1 mg/l	0.4 ppm
Suspended solids	< 35 mg/l			
Ammoniacal nitrogen NH4-N (as N)	< 10 mg/l			
AOX		0.5 mg/l		
Ammonium nitrogen		10 mg/l		
Phosphorous		2 mg/l		
Sulfide	< 1 mg/l	2 mg/l		

(c) For production of polymers, the proposal is to refer to the related BREF document on the production of Polymers (2007). Considering that limit values depend strongly on the type of polymers, additional communication with stakeholders on this topic will be necessary to determine the most appropriate approach:

- One specific limit per polymer type;
- One average limit for all polymers.

Additionally, it should be noted that some synthetic materials commonly used in footwear are not specifically covered by the BREF, such as PU. It should be discussed with stakeholders whether the defined limit values can be applied to them. The BAT emission levels for polymer production are presented in 0.

The Blue Angel label for footwear established the following requirements for the wastewater characteristic during the Processing of Natural Rubber / Latex and the Manufacturing and Processing of Synthetic Rubber:

- 2 mg/l for zinc,
- 0.5 mg/l for lead,
- 1 mg/l for AOX,
- 0.1 mg/l for benzene and its derivatives,
- COD of 150 mg/l or at least 90% reduction compared with the inflow on a monthly average,
- 20 mg/l for total nitrogen (Ntotal) and 2 mg/l for total phosphorous (Ptotal)

(d) Common requirement for proposed Criterion 3(a), (b), and (c)

(e) Revision of the threshold for the chromium content is proposed to be adapted to BAT emissions levels from the Commission Decision No 2013/84/EU on industrial emissions for the Tanning of Hides and Skins (see Table 8), proposing a minimum value 0.3 mg/l as a starting point for discussion. Blue Angel established the limit value of 1 mg chromium /l expressed as total chromium.

AHWG1 stakeholder feedback

An additional question was raised about Proposal (d) when the intermediate material is produced outside of the European Union. Verification procedure requires an applicant to demonstrate that the requirements established by (a), (b) and (c) are fulfilled either by providing a specific test results or by demonstrating the compliance with the requirement (d). The proposal was perceived as possible simplification of application procedure being welcomed by involved stakeholders.

It was suggested that requirement on chromium content in the sewage water should not apply if water is discharged into a municipal plant, in order to be coherent with the proposal (d). The stakeholder highlighted that when industries discharges their water into municipal plants, they do not know the concentrations. In this case the EU Ecolabel should refer to national legislation. If not, all industries that discharge their water in municipal plants would potentially be excluded. The differences in legal requirements between Member States concerning the quality of the waste water discharge into environment along with the implementation of the Directive 91/271/EEC were stated during the consultation process. It was therefore suggested to higher the threshold to 2 or to establish more ambitious level such as 0.5 mg/l of Cr

The need to change from Cr(III) to Cr total was questioned, as the chromium used in tannery is the Cr(III) (*basic chromium sulphate*). Furthermore, in regards to the analytical method proposed, it was stated that EU Ecolabel should not refer to other than European standard that is in force, such as EN ISO 11885.

Integration of other than COD emission threshold in the criterion was not supported by several stakeholders. Another stakeholder recommended that at least the following parameters should be restricted: COD, chromium, biodegradability (e.g. BOD), and ecotoxicity (e.g. egg fish).

Most stakeholders supported that values should be calculated on an annual basis. For textile processing, alignment with EU Ecolabel for textile was supported.

No specific feedback regarding the emission to water from rubber processing was provided.

Follow-up research

The wastewater produced by European tanneries is treated in many different ways, both on-site and of-site treatment is used. In some cases an individual plant applies the Best Available Technology (BAT) on site, whereas in other situations only pre-treatment, partial pre-treatment or no treatment at all is applied, redirecting the effluent to a communal treatment plant.[97] More than 80 % of tanneries in Europe discharge their effluent to public sewers. The main exceptions are those parts of Italy and Spain, where the tanneries are in clusters connected to common effluent treatment plants[98]. The acceptable level of effluent treatment required, before its discharge to the water environment, might differ according to the national requirements being fit to local circumstances.

The proposed Cr total emission threshold value reflects the higher threshold of AELs according to the Commission Implementing Decision of 11 February 2013 establishing the best available

[97] TANEFTREAT, LIFE02 ENV/NL/000114

[98] Best Available Techniques (BAT) Reference Document for the Tanning of Hides and Skins. 2013. JRC Reference Report. © European Union, 2013

techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the tanning of hides and skins (2013/84/EU)[99].

It should be stressed that the pollution load in the effluent is a measure of environmental efficiency of the leather making process. An increase in the efficiency of maximising chromium uptake will solve most of the problems in the final effluent. Reducing the chromium losses to effluent will lead to a lower amount of chromium in the sludge generated during waste water treatment. Without introducing any new chemicals or techniques, tanners can improve the chromium uptake up to 90% (compared to about 60 % in normal operation): by altering both physical and chemical parameters (float levels, chrome offers). [98]

BAT-AELs values of total chromium content are in range from 0.3 to 1 mg/l, set as average monthly values, The emission levels apply for:

- Direct waste water discharge from tanneries on-site waste water treatment plants,
- Direct waste water discharge from independently operated treatment of waste water under section 6.11 in Annex 1 to Directive 2010/75/EU treating waste water mostly from tanneries.

In order to reduce the chromium content of waste water discharges directly after treatment, BAT is to apply on-site or off-site chromium precipitation. The AELs for direct dischargers applies to the point of discharge in the receiving water stream and the AELs for indirect dischargers applies to the waste water before it is discharged to the municipal (or industrial) waste water plant. In practice, it means that every tannery should apply water pre-treatment. In analysed Ecolabel schemes of reference to the product group under revision the limit for chromium emissions is 1 mg/litre or lower.

Leather Working Group introduced the following scoring for Cr content during tanneries auditing[100]:

- -Not measured: 0 points
- >2 ppm : 0 points
- -1.6-2 ppm : 1 point
- -1.2-1.6 ppm: 2 points
- -0.8-1.2ppm: 3 points
- -0.4-0,8 ppm: 4 points
- <0.4 ppm :5 point

With reference to the analytical test method proposed according to Commission Implementing Decision of 11 February 2013 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the tanning of hides and skins (2013/84/EU)[101], (point 1.2.) BAT is to monitor emissions and other relevant process parameters, with the given associated frequency and to monitor emissions according to EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality. The proposal to use other standardised quantification methods under EU Ecolabel aims at giving to the applicant more flexibility to check the compliance with the criterion.

According to BREF (2013), Chromium precipitation is a relatively simple technique and is more efficient if it is carried out in separated effluents after screening. The precipitation of chromium is

[99] C(2013) 618) O.J. L 45/20 16.2.2013
[100] http://www.leatherworkinggroup.com/about/protocol.htm
[101] C(2013) 618) O.J. L 45/20 16.2.2013

achieved by increasing the pH to above 8 using an alkali such as calcium hydroxide, magnesium oxide, sodium carbonate, sodium hydroxide, and sodium aluminate. Chromium and other metals are precipitated as insoluble hydroxides. The pH value required for the precipitation depends upon the type of waste water containing chromium to be treated. Where chromium(III) precipitation is used it is common practice to segregate the effluent streams which contain chromium from those which do not and carry out chromium precipitation on segregated flows before effluent mixing. Where segregation of flows is not possible or where chromium recovery is not used, mixing in contained conditions can be used so that some or all of the alkalinity used to precipitate the chromium is provided by lime in the beamhouse effluent. Efficiencies of 95 – 98 %, 99 % and 99.9 % of chromium precipitation are reported. The recovered chromium sulphate solution can be recycled into the tanning process by replacing up to 35 % of the 'fresh' added chrome tanning salt.

Blue Angel was identified as the scheme that set requirements on wastewater from rubber and polymers processing. The values from Blue Angel come from the German Waste Water Ordinance of 17 June 2004. According to additional information gathered, the COD limit value set in Blue Angel criteria for Footwear was analysed during consultation process thus reflecting best practices of rubber and polymer industry. No additional data was provided nor found in scientific literature, thus hindering the feasibility to set the comprehensive proposal on emission into water from rubber processing. The proposal of criterion 3 (c) reflect Blue Angel requirement (COD) for rubber processing.

Proposal

1. Following the information gathered by JRC-IPTS, the use of chromium elimination techniques is characteristic for specific industry, such as tanning of hides and skins and not municipal waste water treatment plant. Even if the tannery sends its wastewater to a municipal treatment plant, it should first make a specific treatment for chromium (following the technique described in the BAT for the Tanninng of Hides and Skins).
2. The differences in the European infrastructure for tannery effluence treatment, together with different local requirements that may apply support the need to introduce a specific threshold value for chromium content in process effluents.
3. The change from the current requirements for Cr (III) content to Cr total content reflects the industry agreement reached during the BREF for the Tanning of Hides and Skins Technical Working Group Meeting.
4. It should further be consulted with stakeholders if only EN ISO 11885 should be listed as reference analytical method or: ISO 9174 or EN 1233 should also be accepted.
5. It was agreed during the AHWG1 that annual value reporting was the most practical approach for assessment and verification. The BREF for Tanning recommends using weekly or monhly monitoring of waste water. Therefore it is suggested to use monthly average for 6 months before the application (6 values in total) to ensure the constancy of best practices applied.
6. Waste water analysis from rubber and polymers processing should be further discussed with stakeholders.
7. The proposed testing method should be further discussed.

Questions:

- Are the proposed revised limit values and verification procedure acceptable and realistic?
- Which is the most appropriate analytical method for Cr content in waste water analysis?
- Should the requirement on analysis of waste water from rubber processing be withdrawn?
- If not, what levels of COD should be set for natural rubber/synthetic rubber, if applicable?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- The introduction of other emission parameters from leather processing such as sulphide, ammonium or nitrogen content was proposed, together with ecotoxicity (e.g. fish eggs) testing.
- In general, stakeholders supported harmonization with the Commission Implementing Decision of 11 February 2013 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the tanning of hides and skins (2013/84/EU).
- A limit value for Cr total content of 0.5 mg/l was proposed with the specification that chromium measurement should be done in segregated partial flow as indicated in the Blue Angel criteria for footwear.
- Re-wording of verification of the proposal 3(e) was perceived as too complex. It was proposed to incorporate all necessary specification into user manual rather than into legal text.
- Clarification of proposal 3 (d) for the intermediate material produced outside of the European Union was raised.

Follow up and proposals

- As previously analysed[102] required Cr content reflects BAT-AELs values that represents different technologies applied in tannery wastewater processing where both on-site and of-site treatment is used. The criterion intents addressing different technological/infrastructure solutions identified throughout Europe and is harmonized with BAT-AELs for tanning of Hides and Skins.
- Chemical Oxygen Demand (COD) is one of the most widely used metrics in the field of water-quality analysis in water bodies and in the effluents from sewage and industrial plants. COD is assumed as the reliable parameter of a broad measure of the strength of the effluent, having the high relevance to assess wastewater quality. The verification of COD value looks for equality approach and harmonization between different materials. The proposal is aligned with EU Ecolabel criteria for textile.
- The proposal to assess the parameter of fish eggs toxicity for direct discharges is assumed as being of low reliability and limited applicability in the tannery process. It is not listed as AELs in the Commission Implementing Decision 2013/84/EU being considered rather the quality parameter which is taken into account at the stage of operational permit of the treatment plant. The need to perform such a test depends on the receiving environment, the point of being monitored (if any fish eggs should be present).

[102] Follow-up research after 1st AHWG Meeting

- The criterion on the emissions from wet-processing of textile material is proposed to be harmonised with the EU Ecolabel criteria for textiles.
- The criterion on the emissions from wet-processing of rubber is proposed to be harmonised with the Blue Angel criteria for Footwear.

2.3.3 CRITERION 4: Volatile Organic Compounds (VOCs)

Following stakeholders' suggestion supported by existing eco-innovations current limit value was revised. The equation proposed for VOCs evaluation considered the emission generated during processing previous to final footwear assembly (e.g. finishes). The name of the criterion was changed accordingly.

Present criterion, Decision 2009/563/EC
VOCs are any organic compound having at 293.15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use. The total use of VOCs during final footwear production shall not exceed, on average, 20 gram VOC/pair. Assessment and verification: the applicant shall provide a calculation of the total use of VOCs during final shoe production, together with supporting data, test results and documentation as appropriate, with the calculation made using EN 14602. (Registration of purchased leather, adhesives, finishes and production of footwear during at least the last six months is required.)
Suggested criterion (1st AHWG), October 2013
VOCs are any organic compound having at 293.15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use. The total use of VOCs during final footwear production shall not exceed, on average, xx gram VOC/pair. Assessment and verification: the applicant shall provide a calculation of the total use of VOCs during final shoe production, together with supporting data, test results and documentation as appropriate, with the calculation made using EN 14602. (Registration of purchased leather, adhesives, finishes and production of footwear during at least the last six months is required.)
Suggested criterion (2nd AHWG), May 2014
VOCs are any organic compound having at 293.15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use. The total use of VOCs during final footwear production shall not exceed, on average, 18 gram VOC/pair. Assessment and verification: the applicant shall provide a calculation of the total use of VOCs during final shoe production in accordance with EN 14602 and specified in Appendix I. (Registration of purchased leather, adhesives, finishes and production of footwear during at least the last six months is required).
Suggested criterion, November 2014
The total use of VOCs during final footwear production shall not exceed, on average, 18 g VOC/pair. *Assessment and verification: the applicant shall provide a calculation of the total use of VOCs during final shoe production in accordance with EN 14602 Calculation shall be supported by test results and documentation (registration of purchased leather, adhesives, finishes and production of footwear of the) as appropriate. Calculation shall be provided for the period of at least six months prior the application.*

AHWG1 Technical discussion

Volatile organic compounds (VOCs) are defined as any organic compound having at 293.15 K a vapour pressure of 0.01 kPa or more at a temperature of 293.15 K, or having a corresponding volatility under the particular conditions of use. VOCs play a significant role in the formation of ozone and respirable suspended particulates (RSPs) in the atmosphere. VOCs are present in many dyes, adhesives, cleaners and polishes used both in footwear and component materials manufacture. Some chemicals classified as VOCs might still be present in the finished retail product, creating potential exposure risk to the user.

Research has shown that workers employed in footwear manufacture are at increased risk of some cancers, the strongest evidence being for nasal cancer and leukemia. Footwear-workers are routinely exposed to complex mixtures of solvents in degreasers, hardeners, cleaners, primers, and adhesives used in the production process as toluene, n-hexane, acetone, and possibly dust particles, additives in shoe materials and degradation products of materials[103].

Solvents and adhesives are responsible for VOC emissions during and after the application. Those emissions may be responsible for about 35 % of photochemical ozone formation (see Task 3 of the Preliminary Report) during the manufacturing stage of footwear[104] and of 6 % during the production of leather.

In the footwear cementing technique, either solvent-based or water-based adhesives can be used for the stitching step. Solvent-based products are applied with a paint brush. Water-based adhesives can be applied manually by spraying techniques or by paint brushes.

At present, the adhesives most frequently used by footwear industry are polyurethane and polychloroprene adhesives based on organic solvents. The Task 2 of the Preliminary Report highlighted the following best practices commonly used on the market in order to avoid VOC emissions:

- Use of solvent-free adhesives and finishes (water-based, hot-melt),
- Use of filtration systems,
- Use of seams,
- Direct injection of soles.

However, the penetration of these innovations could not be quantitatively evaluated in the footwear sector. The quality tests to determine the upper-sole bonding strength with the use of water based-adhesives confirmed the feasibility of such replacements.[105] The complete elimination of solvents from the adhesives and the treatment process would mean a reduction of more than 80% of the use of solvents in the footwear manufacturing process[106]. A number of companies that are on the way to phase out the use of solvent-based adhesives have been identified within Task 2 Analysis (Section 3). Following the criteria set by GOTS, neither aromatic nor halogenated based solvent can be used in all processing stages. According to PPRC[107], the

[103] Dahlström Heusera, V., Moraes de Andradea, J., Erdtmanna, B. 2005. Comparison of genetic damage in brazilian footwear-workers exposed to solvent-based or water-based adhesive. Mutation Research/Genetic Toxicology and Environmental Mutagenesis 583, pp. 85–94

[104] Understood here as the manufacturing of uppers, soles, and linings and the final assembly. Therefore, it does not include the production of input materials such as textiles fabric, finished leather, and plastics pellets.

[105] http://www.calsindis.inescop.es/results.pdf

[106] ec.europa.eu/environment/life/publications/life/envcompilation02.pdf

[107] Pacific Northwest Pollution Prevention Resource Center: http://www.pprc.org/

purchase price of water-based adhesives is generally 15%-20% less than solvent-based adhesives. So, it would not be an economic constraints to use such types of adhesives.

The LCA analysis used the assumption (based on data from stakeholders) that 20 g of VOC were emitted per one pair of footwear, which is the current limit set by the EU Ecolabel and Blue Angel. Photochemical ozone formation could be reduced by 3 % if a stricter limit is set at 18 g / pair and by 8 % for a limit of 15 g / pair.

AHWG1 stakeholder feedback

It was suggested to make a distinction between shoe uppers and soles, considering that the use of water based adhesives in the sole cementing technique would not meet fitness for use requirements, mainly for the tear strength.

Other stakeholders stated that the application of water-based glues can achieve good product performance. About 40-50% of soles attachment technology is based on gluing. The increase in energy consumption due to the use of water-based adhesives and posterior drying was also addressed. It was therefore suggested to introduce requirements on the use of water-based adhesives for shoe uppers but not shoe soles.

One stakeholder supported the limit value to 15 g VOC / pair. The average VOCs emission for the several EU Ecolabel license holders ,according to the data provided, is 18 g VOC / pair.

In general, stakeholders did not encourage the applicability of the criterion for other stages of the production, mainly due to the complexity of the possible verification.

Follow-up research

The use of solvent-based adhesives is the most important source of solvent related VOC emissions during footwear manufacture. The substitution of solvent-based adhesives by hot melts or water-based adhesives offers the greatest potential for reducing emissions. The applicability of these solvent-free systems depends on the type of footwear, on the used materials and the performance expected of the adhesive. Substitution of solvent-based adhesives is more difficult for the manufacture of heavy duty footwear such as heavy work/safety boots or walking/alpine boots[108].

The magnitude of VOC emission will depend on the type of shoes and the quantity of different materials used (typically 50-150) [109]. Solvent-based adhesives provide better grease-resistance and higher tensile strength compared to dispersions. Typically, polyurethane and neoprene adhesives are used. The process of sole assembly of fashion footwear generates the highest solvent emissions (> 40 % of the total). Varying techniques and adhesive systems are used to join together parts of the shoe uppers. Generally, the parts are joined via bonding and then stitched together. About 10 % of adhesives used in the upper department are solvent-based. The remaining adhesives are either dispersions (70 %) or hot-melt (10%)[110]. The finishing process also generates considerable amount of VOCs emission, e.g. for the fashion shoes - colouring, brilliant varnishing, etc – is responsible for 20 % of the total VOCs[109].

According to PPRC[111], water based adhesives may have the following disadvantages:

[108]http://www.enviroportal.sk/uploads/files/ovzdusie/organicke%20rozpustadla/315pdfsamVOC-doc-210509.pdf

[109] Guidance on VOC Substitution and Reduction for Activities Covered by the VOC Solvents Emissions Directive (Directive 1999/13/EC). Guidance 14: Footwear manufacture. European Commission - DG Environment. 2007

[110] Peters, N. et al. 2002 Best Available Techniques (BAT) for the Paintand Adhesive Application in Germany, Volume II: Adhesive Application, Deutsch-Französische Institut für Umweltforschung (DFIU – German-French Institute for Environmental Research), Karlsruhe, 2002.

[111] http://www.pprc.org/pubs/techreviews/waterbsd/wbtech.html

- The products can have lower peel and shear strength, backing compatibility, and humidity resistance;
- The waterbased glues may increase generation of wastewater and sludge material
- The dry/cure ovens have high energy consumption
- Cleaning is more time and energy intensive. Removing dried adhesive is more difficult

Following SpcialChem[112], water-based adhesives greatly reduce VOC emissions. It also limits the explosion risks and reduces the hazardous waste production and the associated management and disposal costs. The same source also state that durability performance should be considered carefully.

The total amount of VOCs emission generated during footwear production is a sum of emission from various process stages. European Standard EN 14602:2012 *"Footwear-Test methods for the assessment of ecological criteria"* establishes the procedure to calculate the quantity of VOCs emission from purchased leather, adhesives, finishes and production of footwear, as follows:

$$M_{VOCtotal} = \sum(M_{adhesisves} \times C_{VOCa}) + \sum(A_{finishes} \times M_{finishes} \times C_{VOCf})$$

Where:
$M_{VOCtotal}$ is the ttal amount of VOCs used in the production of the pair of shoes, in g;
$M_{adhesives}$ is the amount of adhesives applied to the pair of shoes considered, in g; only adghesives with solvents have to be taken into account, water based and hot melt adhesives are exempted;
C_{VOCa} is the VOC content of the adhesives applied, in g of VOCs per g of adhesives;A finishes is the area of the pair of shoes onto which the finish is applied in m^2;
$M_{finishes}$ is the amount of finishes applied per metre square, in g/m^2;
C_{VOCf} is the VOC content of the finishes applied, in g of VOCs per g of finish
Finishes refers to base coats, top coats and repair coats, (upper) finish layers of leather, synthetics upper, lining, cotton, etc. only when based on solvents.

Proposal

1. According to the analysis conducted and information received from stakeholders there is a technical need for further use of solvent based adhesives.
2. The introduction of the threshold value for VOCs emission per pair of footwear, provides manufacturers with enough flexibility still achieving environmental benefits, ensuring the quality of an article.
3. It is proposed to align the requirement with EN 14602 establishing the threshold limit as 18 g/pair which is representative for the currently EU Ecolabelled footwear.

Questions

1. Is the limit of 18 g VOC / pair acceptable?
2. Is the EN 14602 suitable for the purpose of the EU Ecolabel?
3. Is the proposed revised limit value and verification procedure acceptable and realistic?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

[112] http://www.specialchem4adhesives.com/home/editorial.aspx?id=232

AHWG2 stakeholder feedback

During expert discussion no feedback was provided on the Criterion 4 proposal. No further modifications were proposed to the threshold set in the criterion proposal.

Within the written consultation procedure the need to verify the VOC emission 6 months prior the certification was questioned considering that producers might start large scale production after obtaining the EU Ecolabel certification.

Follow up and proposal:

- Data obtained from the current license holders confirms the feasibility of achieving 18 g VOCs/pair. 6-months reporting period ensures that the product and consumption of chemical preparations used are well known. The testing period reflects requirements laid down in Standard EN 14602.

- Considering the quick turnover of the apparel industry it seems reasonable to provide applicant with the flexible approach. It is to be discussed with the Competent Bodies if reporting could be provided as a sum up of 6 months period. To ensure the possibility to verify the criterion the results that cover at least 3 months should be reported prior application. The complementary information (testing results) could be provided to the Competent Body at the latest three months after submitting the application. The specific information could be introduced into User Manual.

- The wording of the criterion was aligned with the requirements laid down in EN 14602[113] to which reference was introduced.

- The definition of VOCs was integrated under Article 2 to the proposal of the Commission Decision (legal text proposal). The definition is aligned with EN 14602

[113] Footwear. Test methods for the assessment of ecological criteria

2.3.4 CRITERION 5: Energy consumption

Major proposed changes

The energy management was proposed to be integrated under Criterion 9: Energy and waste management during footwear assembly.

Present criterion, Decision 2009/563/EC
The energy consumption at the manufacturing stage shall be declared. Assessment and verification: the applicant is requested to provide the relevant information according to the Technical appendix A1.
Suggested criterion, October 2013
Proposal: The energy consumption for footwear final assembly shall be declared. Proposal 1: The energy consumption of footwear final assembly shall be lower than X MJ per pair on an annual base. If green energy is produced and/or used on site, it should be discounted from the total amount of energy consumed. Proposal 2: The energy consumption of footwear final assembly shall be declared, together with the information on energy consumption for footwear components manufacture. Assessment and verification: the applicant is requested to provide the relevant information according to the Technical appendix X (see Annex II of this document).
Suggested criterion, May 2014
The energy consumption at the manufacturing stage shall be declared. Assessment and verification: the applicant is requested to provide the relevant information according to specification set in Appendix II to this Decision.
Proposed criterion, November 2014
The energy consumption at the manufacturing stage shall be declared. Assessment and verification: the applicant is requested to provide the relevant information according to specification set in Appendix II to this Decision.

AHWG1 technical discussions

The European Commission adopted the 'Energy efficiency plan 2011' (COM(2011) 109 final) in March 2011. Directive 2009/28/EC on the promotion of the use of energy from renewable sources (the "Renewable Energy Directive") established mandatory targets to be achieved by 2020 for a 20% overall share of renewable energy in the EU and a 10% share for renewable energy in the transport sector. One of the actions proposed to promote the energy efficiency plan set in the 'Roadmap for moving to a competitive low carbon economy by 2050' (COM(2011) 112 final) refers to future energy efficiency requirements for industrial equipment, improved information provision for SMEs, and energy audits and energy management systems for large companies[114].

From the life cycle perspective, the energy consumption is one of the most relevant "hot spots" identified within the footwear LCA base case study, being responsible for up to 25% of overall impact. Therefore, it seems prudent to optimise the energy management, either by reducing its consumption and/or by usage of more environmentally respectful energy, such as energy from renewable sources. According to the IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation[115], GHG emissions from renewable energy technologies are, in general, significantly lower than those associated with fossil fuel options. The median GHG emission values

[114] http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Consumption_of_energy

[115] IPCC, 2011. IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation. Schlömer, C. von Stechow (eds). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1075 pp

for all renewable energy sources range from 4 to 46 g CO2eq/kWh, while those for fossil fuels range from 469 to 1,001 g CO2eq/kWh (excluding land use change emissions). Task 4 of the Preliminary Report evaluated the environmental benefits of a footwear company which would use only green energy (assumed as wind power) instead of the European mix, based on an estimated electricity consumption of 2 kWh / pair of shoes (based on stakeholder feedback). Depending on the impact category, the improvement potential for one pair of footwear was between 5 and 19 %. According to EUROSTAT data, renewable energy sources have had the biggest change in the energy mix as their gross inland consumption of primary energy has increased by 74 % between 2000 and 2010, reaching 9.8 % of EU-27 share.

The improvement potential when reducing the electricity consumption from 2 to 0.5 kWh / pair of shoes (based on maximum and minimum values from stakeholders and a mix of Chinese and European electricity mixes) has been quantitatively assessed at between 2 and 18 % for one pair of footwear, depending on the impact category.

According to stakeholder consultation, the main barriers to set up the energy consumption threshold include:

- The contribution of renewable energy to primary energy supply varies substantially by country and region, and depends, to a large degree, on the structure of its energy system, the availability of natural resources for primary energy production, and the structure and development of each economy.
- According to discussions during the working group developing the ADEME-AFNOR PCR for footwear, the energy consumption during footwear assembly depends on the types of technology and processes used, which are directly linked to the type of component materials. The footwear industry still sometimes uses old machinery and technologies that are energy intensive. Therefore, it is very challenging to benchmark the energy consumption or to set one common limit value.
- The different steps of footwear manufacturing (manufacturing of uppers, of soles and linings, and assembly of footwear) generally take place in many different sites which makes the measurement and documentation of energy consumption complicated.

The ratio between total energy usage and the production volume, is also subjected to the specific climate conditions of the country where the product is manufactured (e.g., use of a heating system during long winter months in the North European countries). The basic proposal for the criteria revision is that the applicant shall record and report the energy consumption of the assembly site. The energy produced from green sources could be also declared. The licence criteria for textile skin and leather established by New Zealand Eco-labelling Trust and Nordic Swan Version 4.0. sets a similar approach. Additionally, the Trust label requires reporting the energy management policies, procedures and programmes, including annual report on energy use.
Considering the relevance of energy consumption management, another approach to be analysed during the stakeholder consultation is to introduce a limit value on annual energy use on the annual base.

In both proposals, the scope of evaluation must be precisely defined:

- Only the final assembly site;
- Or, also the manufacturing sites for the uppers, soles and linings.

AHWG1 stakeholders feedback

A specific proposal done for green energy discount did not gather a positive feedback, mainly because of the need to promote a reduction in energy consumption in general. The definition of green energy and energy trading were also discussed. It was stated that manufacturers could not influence green production and that energy usage is also related to economic decisions, therefore its consumption is reduced without specific consideration of product environmental

labelling. The additional value of the criterion establishment was questioned.

Additionally, establishing of energy consumption limits was perceived as supportive for some EU countries, especially those that do not require a heating system. The criterion proposal was perceived as more relevant for production outsourcing, being difficult to comply with, and to set a reasonable threshold value. The possible advantage given to a large manufacturer was also mentioned.

Some stakeholders expressed the opinion that the criterion should not focus exclusively on the energy for assembly site but rather try to encompass the entire supply chain energy consumption.

The difficulty to set a threshold value was clearly stated, considering the limited feasibility of data collection.

All in all, the relevance of maintaining the criterion, most appropriately in the current form, was proposed as a best practice approach.

Proposal

The view of stakeholders during the 1st AHWG Meeting and posterior consultation process was assesses as homogenous. To reflect best practices applied in footwear industry, it is suggested to maintain the current criterion as currently defined.

The formula to calculate the Avearge Energy Consuption (AEC) during final process of shoe assembly is proposed to be aligned with EN14602, as specified in Annex III

Questions

- Should the criterion be maintain as referred in the Commission Decision 2009/563/EC ?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

No further feedback on the criterion was provided during the 2nd AHWG Meeting.

In the further steps the relevance of LCA analysis that identifies energy consumption as one of the environmental "hot spots" was recalled by DG ENV. It was decided to perform further research in respect to energy consumption during the footwear manufacturing process.

Follow-up and proposal

The main barriers to introduce specific energy consumption threshold within the current EU Ecolabel criteria revision for Footwear are specified in the following:

- For the purpose of the LCA analysis included in the Preliminary report, for the manufacturing of footwear, aggregated energy input (electricity and heat) for the process was considered. This was quantified based on information gathered from 4 stakeholders, and ADEME-AFNOR PCR for footwear, based on which an average value and a range of variations were calculated. Due to the limited data available, energy figures can serve for the purposes of the LCA but they cannot be considered as statistically representative.

- The overall numerical data gathered indicate that the range of energy consumption in the production stage varies from 0.5 – 6.7 kWh/pair, depending on the type of shoes and of manufacturing processes applied.

- Data reported from license holders reflects the Average Energy Consumption (AEC) calculated according to Standard EN 14602. To allocate single machinery usage (and related impacts) to a specific shoe is complicated and labour intensive due the complex layout of premises and constant moving of different models of shoes during the production between machineries (in order to maintain machineries working continuously for production and energy efficiency reasons), and accordingly is not practiced in shoe manufacturing.

- It was found that footwear manufacture is labour intensive, with stages that involve machines requiring human operation and other stages that are typically completed by hand e.g. gluing. The type and number of machines used to produce any given pair of footwear varies depending on the organisation of the production line, the type of product, size of the company, production capacity, etc.

- Following the stakeholders feedback, fixing a limited number or type of machines associated with footwear manufacturing in general, or for each type of footwear, does not reflect industrial reality, given the heterogeneity as well as the quick model turnover of the product group "footwear".

- No data was provided within stakeholder consultations that could establish relation between specific type of machinery used and footwear category. The dynamism and multitude of possible footwear production scenarios do not establish a clear base for the fair comparison of the energy demand for the different production processes and the technology used, quantity of different materials involved, and the scale of plant operation.

- Outcomes from the consultation of stakeholders showed that, typically, footwear manufacturing companies produce more than one type of shoe and have track of energy consumption data only at aggregated level (i.e. for the whole production process, or site) for established period of times (e.g. month, year) as reflected in energy consumption bill. Data provided does not allow distinguishing between different types of shoes, materials or processes/machinery used.

- Industry input during the 1st AHWG Meeting clearly indicated that economic saving potential is the key driver for energy efficiency management. Material production is in general is the main identified hot spot in terms of energy consumption.

During investigating with stakeholders how to best address this aspect through a criterion in the revision of EU Ecolabel criteria for Footwear, it turned out to be impossible to establish a model which relates the large variety of materials, specific machinery and technologies, as well as hand craft processes to individual pairs of shoes, and to consequently establish one or more benchmarks for the energy consumption in the production phase.

Considering the lack of available data on energy consumption, as to the current revision it is proposed not to introduce a specific threshold but rather to keep the energy criterion as informative.

In order to increase the specification of accessible information the implementation of energy management plant within footwear manufacturing companies was assessed as of high relevance. It is therefore advisable to address this aspect during the on-going revision being merged with the criterion 9 on waste management. The new proposal is presented under Criterion 9. Information

gathered could serve as a starting point for the further analysis during the next revision of the EU Ecolabel criteria for the product group Footwear.

2.3.5 CRITERIA 6: Hazardous substances present in the final product

Main proposed changes

The changes of the EU Ecolabel are fundamental with respect to the Articles 6(6) and 6(7) of the EU Ecolabel Regulation 66/2010.
This criterion

- represents the common rules adapted to all EU Ecolabels regarding the use of hazardous substances;
- Identifies possible substitution of hazardous substances.

Following life cycle consideration in criteria re-ordering it is proposed to change the numbering of former Criterion 1 to **Criterion 6.**

To provide industry with the clear list of restricted substances and related assessment and verification procedure Restricted Substance List is proposed to be specify under Criterion 7 (Former Criterion 4)

Simultaneously, in order to clearly address Art 6.6. and 6.7. of EU Ecolabel Regulation 66/2010 the former Criterion 1 is proposed to be renamed to: **Hazardous substances present in the final product**.

Present criterion 1, Decision 2009/563/EC
(a) For shoes made of leather, there shall be no Chromium VI in the final product. Assessment and verification: the applicant and/or his supplier(s) shall provide a test report, using test method EN ISO 17075 (detection limit 3 ppm). The sample preparation must follow the indications of the EN ISO 4044. (b) There shall be no Arsenic, Cadmium and Lead in the materials used for the product assembly or in the final product. Assessment and verification: the applicant and/or his supplier(s) shall provide a test report using one of the following EN 14602 test methods: testing the materials or testing the final product. For leather products the sample preparation shall follow EN ISO 4044. (c) The amount of free and hydrolysed formaldehyde of the components of the footwear shall not exceed the following limits: — textile: not detectable, — leather: 150 ppm. Assessment and verification: the applicant and/or his supplier(s) shall provide a test report, using the following test methods: Textiles: EN ISO 14184-1 (detection limit: 20 ppm); Leather: EN ISO 17226-1 or 2.
Criterion proposal (1st AHWG), October 2013
a) Hazardous substances and mixtures According to Article 6(6) of Regulation (EC) No 66/2010, the EU Ecolabel may not be awarded to any product, or any article of it as defined in Article 3(3) of Regulation (EC) No 1907/2006 or homogenous part of it that contains substances meeting the criteria for classification with the hazard statements or risk phrases as specified in

Table 9 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council or Council Directive 67/548/EC , or substances referred to in Article 57 of Regulation (EC) No 1907/2006. In case the threshold for classification of a substance or mixture with a hazard class differs from the one of a risk phrase, then the former prevails. The risk phrases in

Table 9 generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures apply. Substances or mixtures which change their properties through processing and, thus, are no longer bioavailable, or undergo chemical modification in a way that removes the previously identified hazard are exempted from criterion 1 (a).

Table 9: Hazard statements and risk phrases

Hazard statement according to CLP 1272/2008/EEC	***Associated risk phrases according to Directive 67/548/EEC***
H300 Fatal if swallowed	R28
H301 Toxic if swallowed	R25
H304 May be fatal if swallowed and enters airways	R65
H310 Fatal in contact with skin	R65
H311 Toxic in contact with skin	R65
H330 Fatal if inhaled	R23; R26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R23
H341 Suspected of causing genetic defects	R68
H350 May cause cancer	R45
H350i May cause cancer by inhalation	R49
H351 Suspected of causing cancer	R40
H360F May damage fertility	R60
H360D May damage the unborn child	R61
H360FD May damage fertility. May damage the unborn child	R60-61
H360Fd May damage fertility. Suspected of damaging the unborn child	R60-63
H360Df May damage the unborn child. Suspected of damaging fertility	R61-62
H361f Suspected of damaging fertility	R62
H361d Suspected of damaging the unborn child	R63
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child	R62-63
H362 May cause harm to breast-fed children	R64
H370 Causes damage to organs	R39/23; R39/24; R39/25; R39/26; R39/27; R39/28
H371 May cause damage to organs	R68/20; R68/21; R68/22
H372 Causes damage to organs through prolonged or repeated exposure	R48/25; R48/24; R48/23
H373 May cause damage to organs through prolonged or repeated exposure	R48/20; R48/21; R48/22
H400 Very toxic to aquatic life	R50
H410 Very toxic to aquatic life with long-lasting effects	R50-53
H411 Toxic to aquatic life with long-lasting effects	R51-53
H412 Harmful to aquatic life with long-lasting effects	R52-53
H413 May cause long-lasting harmful effects to aquatic life	R53
EUH059 Hazardous to the ozone layer	R59
EUH029 Contact with water liberates toxic gas	R29
EUH031 Contact with acids liberates toxic gas	R31

EUH032 Contact with acids liberates very toxic gas	R32
EUH070 Toxic by eye contact	R39-41
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled	R42

Concentration limits for substances or mixtures which may be or have been assigned the hazard statements or risk phrase listed in

Table 9, meeting the criteria for classification in the hazard classes or categories, and for substances meeting the criteria set out in points (a), (b) or (c) of Article 57 of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008. Where specific concentration limits are determined, they shall prevail over the generic ones.
Concentration limits for substances meeting the criteria set out in points (d), (e) or (f) of Article 57 of Regulation (EC) No 1907/2006 shall not exceed 0.1% weight by weight.
The final product shall not be labelled with a hazard statement.
Assessment and verification: for the product or any article or homogenous part of it, the applicant shall provide a declaration of compliance with criterion 1 (a), together with related documentation, such as declarations of compliance signed by their suppliers, on the non-classification of the substances or materials with any of the hazard classes associated to the hazard statements referred to in

Table 9 in accordance with Regulation (EC) No 1272/2008, as far as this can be determined, as a minimum, from the information meeting the requirements listed in Annex VII to Regulation (EC) No 1907/2006. This declaration shall be supported by summary information on the relevant characteristics associated to the hazard statements referred to in

Table 9, to the level of detail specified in Sections 10, 11 and 12 of Annex II to Regulation (EC) No 1907/2006.
Information on intrinsic properties of substances may be generated by means other than tests, for instance, through use of alternative methods such as in vitro methods, by quantitative structure activity models or by the use of grouping or read-across in accordance with Annex XI to Regulation (EC) No 1907/2006. Sharing of relevant data across the supply chain is strongly encouraged.
The information provided shall relate to the forms or physical states of the substance or mixtures as used in the final product.
For substances listed in Annexes IV and V to Regulation (EC) No 1907/2006, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of that Regulation, a declaration by the applicant shall suffice to comply with criterion 1 (a).
(b) Substances listed in accordance with Article 59(1) of Regulation (EC) No 1907/2006
No derogation from the exclusion in Article 6(6) of Regulation (EC) No 66/2010 shall be given concerning substances: identified as substances of very high concern and included in the list provided for in Article 59(1) of Regulation (EC) No 1907/2006, or present in mixtures, in an article or in any homogeneous part of a complex article in concentrations > 0.1%. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008

shall apply in cases where the concentration is lower than 0.1%.
Assessment and verification: reference to the list of substances identified as substances of very high concern shall be made on the date of application[116]. The applicant shall provide a declaration of compliance with criterion 3 (b), together with related documentation, including declarations of compliance signed by the material suppliers and copies of relevant Safety Data Sheets for substances or mixtures in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006 for substances and mixture(c) Manufacturing Restricted Substance List
The final product and the production recipes used to manufacture the final product shall not contain the hazardous substances listed in the Manufacturing-Restricted Substance List (RSL) at or above the concentration limits specified. The RSL can be found in 0.
The RSL shall be communicated to suppliers and agents responsible for the different stages of production. Verification and testing requirements are specified in the RSL for the production stage and for the final product.
Assessment and verification: The applicant shall provide a declaration of compliance with the RSL supported by evidence as applicable to the substances and production recipes used to manufacture the final product. The specific requirements are indicated in the RSL and include declarations obtained from those responsible for related production stages, declarations from chemical suppliers and test results from laboratory analysis of samples of the final product.
Declarations obtained from production stages shall be supported by Safety Data Sheets (SDS) for production recipes and, where necessary, declarations from chemical suppliers. Safety Data Sheets shall be completed in accordance with the guidance in Section 10, 11 and 12 of Annex II of Regulation (EC) 1907/2006 (Requirements for the Compilation of Safety Data Sheets). Incomplete Safety Data Sheets (SDS) will require supplemental declarations from chemical suppliers.
Laboratory analysis of the final product shall be performed for specific product lines, where specified in the RSL and according to the test methods listed. Testing, where required, shall be performed upon application and once a year thereafter on a random basis for each product line, with results then communicated to the relevant Competent Body. Test data obtained for the purposes of compliance with industry RSLs and other footwear certification schemes shall be accepted where the test methods are equivalent and have been performed on a representative sample of the final product. A failing of a test result during a license period shall result in retesting for the specific product line. If the second test fails, then the license shall be suspended for the specific product line. Remedial action consisting of an evaluation report identifying the reasons for test failure followed by achievement of a compliant test result will be required in order to re-instate the license.

Criteria Proposal (2nd AHWG), May 2014

Criterion 6: Hazardous substances present in the final product

6 (a) Hazardous substances and mixtures

According to Article 6(6) of Regulation (EC) No 66/2010, the EU Ecolabel may not be awarded to any product, or any article of it as defined in Article 3(3) of Regulation (EC) No 1907/2006 or homogenous part of it that contains substances meeting the criteria for classification with the hazard statements or risk phrases as specified in Table 1 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council or Council Directive 67/548/EC, or substances referred to in Article 57 of Regulation (EC) No 1907/2006. In case the threshold for classification of a substance or mixture with a hazard class differs from the one of a risk phrase,

[116] http://echa.europa.eu/web/guest/candidate-list-table

then the former prevails. The risk phrases in Table 1 generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures apply. Substances or mixtures which change their properties through processing and, thus, are no longer bioavailable, or undergo chemical modification in a way that removes the previously identified hazard are exempted from criterion 6 (a).

Table 1: Restricted hazard classification and risk phrases and their CLP categorisation (See: Table 8)

Concentration limits for substances or mixtures which may be or have been assigned the hazard statements or risk phrase listed in Table 1 (see Table 8), meeting the criteria for classification in the hazard classes or categories, and for substances meeting the criteria set out in points (a), (b) or (c) of Article 57 of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008. Where specific concentration limits are determined, they shall prevail over the generic ones.

Concentration limits for substances meeting the criteria set out in points (d), (e) or (f) of Article 57 of Regulation (EC) No 1907/2006 shall not exceed 0.1% weight by weight.

The final product shall not be labelled with a hazard statement.

For substances listed in Annexes IV and V to Regulation (EC) No 1907/2006, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of that Regulation, a declaration by the applicant shall suffice to comply with criterion 6 (a).

In accordance with Article 6(7) of Regulation (EC) No 66/2010 the substance groups in table 2 are specifically derogated from the requirements specified above and in accordance with the derogation conditions described in table 2. For each substance group all derogation conditions shall be met for the specified hazard classifications.

Table 2: Derogated hazard classifications by substance group

Assessment and verification:
The applicant shall provide the bill of materials of the product, including a list with all articles and homogenous part of it.

The applicant shall screen the presence of substances and mixture that may be classified with the hazard statements or risk phrases reported in Table 1. The applicant shall provide declaration of compliance with Criterion 6 (a) for the product, any article or any homogenous part of it.

The applicant shall select the most appropriate form of verification:
(i) Articles manufactured according to a specific chemical formulation or treatment (e.g. textile, leather, PUR): Safety Data Sheet shall be provided for the final article or for the substances and mixture composing the final article above the cut-off limit of 0.10 % w/w
(ii) Homogenous parts and any associated treatments or impurities (e.g. plastics, metal accessories): Safety Data Sheet shall be provided for the materials composing the par of the product and for substances and mixtures used in the formulation and treatment of the materials remaining in the final product above a cut off limit of 0.10% w/w
(iii) Chemical recipes used to impart specific function to the final product or product components (e.g. glues, adhesives, water repellents, biocides, dyes, plasticisers): Safety Data Sheet shall be provided for substances and mixtures used in the assembly of the final product or substances and mixtures applied to component materials during their processing and remaining in the final product

The declaration shall include related documentation, such as declaration of compliance signed by the suppliers, on the non-classification of the substances, mixtures or materials with any of the hazard statements or risk phrases referred in the Table 1 in accordance with Regulation (EC) No 1272/2008, as far as this can be determined, as a minimum, from the information meeting requirements listed in Annex VII to Regulation (EC) No 1907/2006.

The information provided shall relate to the forms of physical states of the substance or mixture as used in the final product.

(i) For substances that have not been registered under Regulation (EC) No 1907/2006 and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to that Regulation;
(ii) For substances that have been registered under Regulation (EC) No 1907/2006 and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non-classified status of the substance;
(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to Regulation (EC) No 1907/2006;
(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under Regulation (EC) No 1272/2008 together with information relevant to the mixtures hazard classification according to Annex II to Regulation (EC) No 1907/2006.

Safety Data Sheets (SDS) shall be completed in accordance with the guidance in Section 10, 11 and 12 of Annex II of Regulation (EC) 1907/2006 (Requirements for the Compilation of Safety Data Sheets). Incomplete SDS will require supplementing by declarations from chemical suppliers.

Information on intrinsic properties of substances may be generated by means other than tests, for instance, through use of alternative methods such as in vitro methods, by quantitative structure activity models or by the use of grouping or read-across in accordance with Annex XI to Regulation (EC) No 1907/2006. Sharing of relevant data across the supply chain is strongly encouraged. The information provided shall relate to the forms or physical states of the substance or mixtures as used in the final product.

Where substances are derogated in table 2 then the declaration shall specifically identify those derogated substances and provide supporting evidence showing how the derogation conditions are to be met.

6(b) Substances listed in accordance with Article 59(1) of Regulaiton (EC) No 1907/2006
No derogation from the exclusion in Article 6(6) of Regulation (EC) No 66/2010 shall be given concerning substances: identified as substances of very high concern and included in the list provided for in Article 59(1) of Regulation (EC) No 1907/2006, or present in mixtures, in an article or in any homogeneous part of a complex article in concentrations > 0.1%. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008 shall apply in cases where the concentration is lower than 0.1%.

Assessment and verification: Substances and recipes used at each production stage shall be screened against the latest version of the candidate list published by ECHA. The applicant shall compile declaration of compliance from each production stage supported by screening documentation.

Criterion Proposal, November 2014

(a) Hazardous substances and mixtures

According to Article 6(6) of Regulation (EC) No 66/2010, the EU Ecolabel may not be awarded to any product, or any article of it as defined in Article 3(3) of Regulation (EC) No 1907/2006 or homogenous part of it that contains substances meeting the criteria for classification with the hazard statements or risk phrases as specified in Table 2 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council or Council Directive 67/548/EC, or substances referred to in Article 57 of Regulation (EC) No 1907/2006. The most recent classification rules adopted by the Union shall take precedence over the listed hazard classification and risk phrases. Applicant shall therefore ensure that any classifications are based on the most recent classification rules.
The risk phrases in Table 2 generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures apply.

Table 2: Restricted hazard classification and risk phrases and their CLP categorisation

Acute toxicity	
Category 1 and 2	Category 3
H300 Fatal if swallowed (R28)	H301 Toxic if swallowed (R25)
H310 Fatal in contact with skin (R27)	H311 Toxic in contact with skin (R24)
H330 Fatal if inhaled (R23/26)	H331 Toxic if inhaled (R23)
H304 May be fatal if swallowed an enters airways (R65)	EUH070 Toxic by eye contact (R39/41)
Specific target organ toxicity	
Category 1	Category 2
H370 Causes damage to organs (R39/23, R39/24, R39/25, R39/26, R39/27, R39/28)	H371 May cause damage to organs (R68/20, R68/21, R68/22)
H372 Causes damage to organs (R48/25, R48/24, R48/23)	May cause damage to organs (R48/20, R48/21, R48/22)
Respiratory and skin sensitisation	
Category 1A	Category 1B
H317: May cause allergic skin reaction (R43)	H317: May cause allergic skin reaction (R43)
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	Category 2
H340 May cause genetic defects (R46)	H341 Suspected of causing genetic defects (R68)
H350 May cause cancer (R45)	H351 Suspected of causing cancer (R40)
H350i May cause cancer by inhalation (R49)	
H360F May damage fertility (R60)	H361f Suspected of damaging fertility (R62)
H360D May damage the unborn child (R61)	H361d Suspected of damaging the unborn child (R63)
H360FD May damage fertility. May damage the unborn child (R60, R60/61/)	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child (R62/63)
H360Fd May damage fertility. Suspected of damaging the unborn child (R60/63)	H362 May cause harm to breast fed children (R64)

H360Df May damage the unborn child. Suspected of damaging fertility (R61/62)	
Hazardous to the aquatic environment	
Category 1 and 2	Category 3 and 4
H400 Very toxic to aquatic life (R50)	H412 Harmful to aquatic life with long lasting effects (R52/53)
H410 Very toxic to aquatic life with long-lasting effects (R50/53)	H413 May cause long-lasting effects to aquatic life (R53)
H411 Toxic to aquatic life with long-lasting effects (R51/53)	
Hazardous to the ozone layer	
EUH059 Hazardous to the ozone layer (R59)	

Concentration limits for substances or mixtures which may be or have been assigned the hazard statements or risk phrase listed in Table 2, meeting the criteria for classification in the hazard classes or categories, and for substances meeting the criteria set out in points (a), (b) or (c) of Article 57 of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008. Where specific concentration limits are determined, they shall prevail over the generic ones.

Concentration limits for substances meeting the criteria set out in points (d), (e) or (f) of Article 57 of Regulation (EC) No 1907/2006 shall not exceed 0.1% weight by weight.
The final product shall not be labelled with a hazard statement.

For substances listed in Annexes IV and V to Regulation (EC) No 1907/2006, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of that Regulation, a declaration by the applicant shall suffice to comply with criterion 6 (a).

The non-presence of the above referred to substances shall be declared for the final product and, for articles that constitute final product. As a minimum, the following group of substances shall be verified:

- biocides,
- dyestuff (including pigments and varnishes),
- auxiliary carriers, levelling, blowing and dispersing agents,
- fatiquoring agents,
- solvents,
- print thickeners, binders, stabilizers, and plasticizers,
- flame retardants,
- cross linking agents,
- water dirt and stain repellents.

In accordance with Article 6(7) of Regulation (EC) No 66/2010 the substance groups listed in Table 3 are specifically derogated from the requirements specified above and in accordance with the derogation conditions described. For each substance group all derogation conditions shall be met for the specified hazard classifications.
Table 3 Derogated hazard classifications by substance group for substances that impart function to the final product

Substance group	Derogated hazard classifications	Derogation conditions	Applicability to footwear

Antimony Trioxide – ATO	H351	ATO shall be used as catalyst in polyester Emissions to air in the workplace where ATO is applied shall meet an eight hour occupational exposure limit value of 0.5 mg/m^3.	Polyester
Nickel	H317, H351, H372	Nickel shall be contained in stainless steel. Specific migration value shall be respected	Metal toe-caps and footwear accessories
Dyestuff for dyeing and non-pigment printing	H301, H311, H331, H317, H334	Dust free dye formulations or automatic dosing and dispensing of dyes shall be used by dye houses and printers to minimise worker exposure	Dyestuff
	H411, H412, H413	Dyeing processes using reactive, direct, vat, sulphur dyes with these classifications shall meet a minimum of one of the following conditions: 1) Use of high affinity dyes; 2) Achievement of a reject rate of less than 3.0%; 3) Use of colour matching instrumentation; 4) Implementation of standard operating procedures for the dyeing process; 5) Use of colour removal to treat wastewater 6) The use of solution dyeing and/or digital printing are exempted from these conditions water	Dyestuff
Flame retardants	H317 (1B), H373, H411, H412, H413	- The product must be intended and marketed as such to be used in applications in which it is required to meet fire protection requirements in ISO, EN, Member State or public sector procurement standards and regulations. - The product shall meet the requirements for durability of function specified under Directive 89/686/EEC	Flame retardants for protective footwear under Directive 89/686/EEC

Water, dirt and stain repellents	H413	The repellent and its degradation products shall be readily and/or inherently biodegradable and nonbioaccumulative in the aquatic environment, including aquatic sediment.	Water repellence
Other residual substances that may be found on the final product			
Auxilliaries comprising: Carriers, Levelling agents, Dispersing agents, Surfactants, Thickeners, Binders,	H301, H311, H331, H371, H373, H317 (1B), H334, H411, H412, H413, EUH070,	Recipes shall be formulated using automatic dosing systems and processes shall follow standard operating procedures. Residual auxiliaries classified with H311, H331, H317 (1B) shall not be present on the final product at concentrations greater than 1.0% w/w.	Auxiliaries

Parts of the product composed of textiles that are awarded with the EU Ecolabel based on the ecological criteria of the Commission Decision 2014/350/EU comply with Criterion 6a.

Assessment and verification: the verification applies to both the final product and articles thereof. The applicant shall provide the bill of materials of the product, including a list with all articles and homogenous part of it. Weights of different materials shall be expressed as grams and as a percentage of the total product unit weight.

For each restriction listed in Table 2 the applicant shall obtain from suppliers of component parts declarations of compliance, and, where stipulated, provide valid test reports or toxicological data to support the hazard classifications of substances that are present. Test reports, where required, shall be valid at the time of application for a production model. Applicants shall additionally identify where derogated substances are present in the product and provide supporting evidence showing how the derogation conditions have been met.

The following technical information shall be provided to support declarations of the hazard classification or non-classification for each substance identified as being used:
(i) The substance's CAS number;
(ii) Harmonised CLP hazard classifications;
(iii) Self-classification entries in ECHA's REACH register.

Where a classification is recorded as 'data lacking' or 'inconclusive' according to the REACH register, or where the substance has not yet been registered under the REACH system, toxicological data shall be provided that is sufficient to support conclusive self-classifications in accordance with Annex II of the CLP Regulation and ECHA's supporting guidance. In the above mentioned cases self-classifications shall additionally be verified by a third party with the following being accepted:

(i) A Safety Data Sheet prepared in accordance with Section 2,3,9,10, 11 and 12 of Annex II of the CLP Regulation;
(ii) Toxicological studies by ECHA Peer Agencies or other Governmental regulatory bodies;
(iii) An expert review of scientific literature and existing testing data, where necessary supported by results from new testing using methods approved by ECHA and carried out by independent laboratories;
(iv) A report prepared by a toxicologist accredited to an independent hazard assessment

scheme in accordance with the guidelines in Annexes I and II of ISO 17065. Schemes shall be based on the GHS or CLP hazard classification system;

Information on the hazardous properties of substances may be generated by means other than tests, for instance through the use of alternative methods such as in vitro methods, by quantitative structure activity models or by the use of grouping or read-across in accordance with Annex XI to Regulation (EC) No 1907/2006.

The applicant shall demonstrate the compliance with the criterion regarding the parts of the product composed of textiles that are awarded with the EU Ecolabel by providing a copy of the EU Ecolabel certification with a proof that this was awarded in accordance with the Commission Decision 2014/350/EU.

(b) Substances listed in accordance with Article 59(1) of Regulation (EC) No 1907/2006

No derogation from the exclusion in Article 6(6) of Regulation (EC) No 66/2010 shall be given concerning substances: identified as substances of very high concern and included in the list provided for in Article 59(1) of Regulation (EC) No 1907/2006, or present in mixtures, in an article or in any homogeneous part of a complex article in concentrations over 0.10%. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008 shall apply in cases where the concentration is lower than 0.10% by weight.
Reference to the latest list of substances of very high concern shall be made on the date of application.

Parts of the product composed of textiles that are awarded with the EU Ecolabel based on the ecological criteria of the Commission Decision 2014/350/EU comply with the Criterion 6b

Assessment and verification: the applicant shall provide a declaration of compliance signed by the material supplier and copies of relevant Safety Data Sheets for substances or mixtures in accordance with Annex II to Regulation (EC) No 1907/2006. Substances and recipes used at each production stage shall be screened against the latest version of the candidate list published by ECHA. The applicant shall compile declaration of compliance from each production stage supported by screening documentation.

The applicant shall demonstrate the compliance with the criterion regarding the parts of the product composed of textiles that are awarded with the EU Ecolabel by providing a copy of the EU Ecolabel certification with a proof that this was awarded in accordance with the Commission Decision 2014/350/EU.

GENERAL DIRECTION OF THE CRITERA ON HAZARDOUS SUBSTANCES

AHWG1 technical discussion

Background information

In order to address the chemicals in ecolabelled products, the EU Ecolabel Regulation sets requirements related to the presence of hazardous substances in the final product.
In accordance with Article 6(6) of the Regulation, it is required that the product or any component of it shall not contain substances that are:

1. Restricted or authorised by reference to them in Article 57 of Regulation (EC) 1907/2006 (REACH);

2. Identified as Substances of Very High Concern (SVHC) according to the procedure described in Article 59(1) of Regulation (EC) No 1907/2006 and included in ECHA's Candidate List;[117]
3. Classified as carcinogenic, mutagenic or toxic for reproduction (CMR), toxic and hazardous to the environment in accordance with Regulation (EC) No 1272/2008 or Directive 67/548/EC which are identified in the form of Hazard Statements.

In accordance with Article 6(7), no derogation shall be given concerning substances that meet the criteria of Article 57 of Regulation (EC) 1907/2006 and are identified according to the procedure described in Article 59(1) of that Regulation, and that present in mixtures, in an article or in any homogeneous part of a complex article in concentrations higher than 0.1 % (weight by weight).

Shoes are complex consumer products that encompass a broad variety of materials (with very specific characteristics) used in their production. Therefore, footwear may consist of one or a few components, or involve a complex construction, which in the case of an athletic shoe can comprise 65 (or more) distinct parts, often material blends, requiring more than 360 processing steps to finalize its assembly.[118] ,[119] In the ongoing revision process, leather, textile, plastics, and synthetic rubber have been identified as the main material types used for footwear production, as specified in the Preliminary Report. Nearly 90%[120] of components/materials used along the footwear industry supply chain have chemical origin or chemical processes have been used for their treatment and/or modification. The chemical substances used in materials manufacturing, finishing, or footwear assembly may be present in the final product. Some of these substance are known to be classified as hazardous according to the CLP and REACH Regulation. Following the market analysis conducted under Task 2 of the Preliminary Report (Section 2), extra-European import is the dominant source of footwear consumed in Europe (89% in terms of volume and 67% in terms of value of the apparent consumption in 2011[121]). According to estimates reported by the Nordic Council of Ministers[122], as much as 900 tonnes per annum of SVHC could theoretically be imported into the EU via the chemicals contained in shoes. Apart of that, the main findings of non-LCA impact analysis conducted confirm the possible risk from the presence of harmful substances in shoes on the European market, including in the children shoes.[123,124,125,126]

As specified in the Task 3 of the Preliminary Report, the footwear industry exhibits complex manufacturing chains. It is a fragmented and heterogeneous sector dominated by small and medium-sized enterprises. The global footwear production outsourcing to lower labour cost

[117] http://echa.europa.eu/web/guest/candidate-list-table

[118] Lee, J.L. and Rahimifard, S. (2012). An air-based automated material recycling system for post-consumer footwear products. Resource, Conservation and recycling 69, pp 90-99

[119] Cheah, L., Ciceri, N.D., Olivetti, E., Matsumara, S., Forterre, D., Roth, R., Kirchain, R. (2013), Manufacturing-focused emissions reductions in footwear production. Journal of Cleaner Production 44, pp 18-29

[120] Ministerstwo Gospodarki we współpracy z Instytutem Przemysłu Skórzanego w Krakowie. 2009. Przewodnik dla przemysłu skórzanego producentów i użytkowników wyrobów skórzanych i skóropodobnych. Warszawa

[121] Estimated based on data available in Eurostat

[122] Nordic Council of Ministers. 2010. Assessment of application of the 0.1% limit in REACH triggering information on substances of very high concern (SVHC) in articles. TermNord.

[123] The Swedish Society for Nature Conservation. 2009. Bad shoes stinks. Report from The Swedish Society for Nature Conservation

[124]Danish Ministry of he Environment EPA.2011. Survey and health assessment (sensitisation only) of chromium in leather shoes

[125] Austrian Ministry for Labour, Social Affairs and Consumer Protection. 2011. Chemical requirements for consumer products.

[126] Der Laud der Dinge. 2013. TEST Kindersandalen.. ÖKO-TEST Kinder 6 I 2013

countries may hinder possible control of product safety[127]. Management of the materials supply chain has been identified[128] as one of the emerging strategies to master environmental performance of products and improve material traceability, mainly by introducing clear management rules such as specific guidelines for environmental product performance requirements. Globally, leading shoe and apparel manufactures (e.g., Adidas, Inditex Group, H&M, C&A, ESPRIT, PUMA, Nike, Hugo Boss, Timberland, Mark and Spencer, New Balance, or Legero, among others) have committed themselves to bring forward environmentally friendly actions into their product lines. Based on the information gathered as part of the on-going revision process, we have observed a similar tendency among footwear intermediate material producers to improve the environmental performance of production stage[129,130,131,132,133].

Introduction of the ~~Manufacturing~~ Restricted Substance List (RSL) would create a blacklist of substances that could potentially allow merging Criterion 1 (c) proposal (Dangerous substances in the final product-RSL) and Criterion 4 (Use of hazardous substances – up until purchase), providing simultaneously comprehensive and systemized list of hazardous substances potentially present in the product or used during the manufacturing stages.

The proposal is to discuss the RSL approach to see if it receives a positive feedback from stakeholders and if it should fall under the former Criterion 1. In this case, this companion proposal is to rename the criterion as "Excluded or limited substances and mixtures." The other option is to introduce it as a separate criterion, a new Criterion 2 that integrates the former Criterion 4.
For some other product groups[134] a thorough discussion has been conducted to determine the most comprehensive strategy for implementing the so-called "horizontal approach" for the criterion on hazardous substances potentially present in the final product—especially on how applicants can document and verify compliance with such a criterion. For footwear, this issue raises specific questions, such as:

- Which substances currently used by industry should be restricted?
- What proportion of these substances may subsequently remain in the final product, either as residues or as functional components?
- What is the capacity of industry to respond to restriction of listed classifications?
- Are all the classifications relevant, considering the exposure paths associated with the footwear supply chain and the subsequent use and disposal phases?
- Manufacture of footwear component materials and footwear itself can be performed in different geographical locations. What is the level of industry capacity to control this very complex supply chain?

[127] Khans-I.E., Ruden, C., Breitholtz,M. 2010. Chemical risks and consumer products: The toxicity of shoe soles. Ecotoxicology and Environmental safety 73, pp. 1633-1640

[128] Task 2, Section 2 of the Preliminary Report

[129] Rydin, S. (2011) Risk Management of Chemicals in the Leather Sector: A Case Study from Sweden. In: B. Bilitewski et al. (eds.), Global Risk-Based Management of Chemical Additives I: Production, Usage and Environmental Occurrence, Hdb Env Chem, Springer-Verlag Berlin Heidelberg 2011

[130] BREF Tanning (2013)

[131] BREF Textile

[132] (COTANCE, 2012)

[133] BREF Polymers

[134] Textiles and flushing toilet and urinal equipment in particular

The textile working group has highlighted the need to refer to current industry practices in the use of Restricted Substance Lists (RSLs) which are communicated to suppliers.[135] The group's discussions also suggested that many of the current criteria could be brought together under the new hazardous substances criteria. Specifically for footwear, the existence of schemes such as the Blue Angel, Nordic Swan, ÖKO-TEST, SG, and Bluesign, and the RSLs of large footwear manufacturers means that final product testing is readily available.

The potential for granting derogations, in line with Article 6(7) of the EU Ecolabel Regulation (EC) 66/2010, needs to be carefully evaluated and adjusted to the actual state-of-the art and best practices application. This is also an area in which the cost and complexity of the verification process need to be carefully considered. Harmonisation with existing labels could be supportive in this regard. Blue Angel and Oeko-Tex, for example, are based on the testing of finished products and have an extensive global network of affiliated testing laboratories and Competent Bodies.

Harmonisation with RSLs from global brands is also desirable. The limit values in the lists refer to leather, textiles, plastics and other materials being used by these global brands. Many producers of materials supplying the global brands copy these lists and distribute them along the supply chain, for example, to their chemical product suppliers. In most cases, the global brands base their specification limit values on the regulations that exist. When a regulation does not exist, the brands establish their own limit values. The Apparel and Footwear International RSL Management (AFIRM) Group has created a Restricted Substance Guidance which is a summary of all AFIRM brand RSLs, and which reflects the most stringent substance limit and the corresponding test method.

~~Manufacturing~~ Restricted Substances List (RSL)

The existing Ecolabel criteria, other ecolabels schemes (such as the Nordic Swan, the Blue Angel, the Japanese Eco Mark), and existing RSLs (AFIRM, TFL, brand RSLs) were screened in order to identify existing substance restrictions. The RSL for the EU Ecolabel for textiles was also checked in order to ensure coherence.

The results were then compiled into a preliminary draft proposal for the Manufacturing Restricted Substance List (RSL) set in the 0 of this Technical Report. These are intended to align the RSL with other RSLs and labels, considering production stages, and to make the list clearer and easier to communicate to suppliers. Therefore, the proposed RSL is designed to identify potential hazardous substances in specific types of materials and assess the risk of occurrence in the finished product.

The basic approach proposed requires manufacturers to screen the Hazard Statements of their production recipes based primarily on Safety Data Sheet information, but supplementing this as necessary with specific tests. These elements will be discussed with the stakeholders in order to understand their appropriateness and need within this specific product group. Therefore, two alternative methods of assessment and verification are proposed according to the probability that the substance might be present or used within footwear supply chain:

1. Declaration of no-use supported by the declarations from manufacturer and Safety Data Sheet (SDS);
2. Specific test report presenting the results obtained following a specified test procedure.

This approach could potentially simplify assessment and verification and increase the efficiency of footwear testing in relation to the broad range of materials that may require test. Based on the

[135] (JRC-IPTS, 2013): Revision of the European Ecolabel and Green Public Procurement (GPP) Criteria for Textile Products - Technical Report and Criteria Proposals

Textile Working Group Approach[136] , possible further improvement of final product testing could include the following:

1. Testing could be limited based on a screening of the product characteristics, e.g., specific material, colours, products intended for children:
2. In-house testing of intermediate products by manufacturers or suppliers could be accepted;
3. Mutual recognition with the EU Ecolabel for textile;
4. Equivalent testing carried out for other labels could be accepted (e.g., Oeko-Tex 100, Nordic Swan, Blue Angel, Schadstoffgeprüf –SG, or equivaent);
5. Mutual recognition of manufacturers RSLs and independent labels RSLs without the need to examine testing results.

The possibility to applying the proposed approach will be subject to the stakeholders' feedback; if successful, the proposal would be to compile a comprehensive list of restricted substances that will be verified based on the materials used. Therefore, the aim of the RSL is to represent a consolidation of existing Ecolabel substance restrictions, substances restricted by REACH, substances on the ECHA Candidate List and proposals from stakeholders.

Moreover, given the potential complexity of applying this criterion to footwear products, it is important that the approach proposed is practical to implement and reflects industry best practices. The environmental improvement potential must also be balanced against the relative importance of the other EU Ecolabel criteria and the capacity of industry to respond.

Derogation for hazardous substances

Depending on the stakeholders' feedback and industry request, some derogations could be granted to certain substances in line with the Article 6(7) of the EU Ecolabel Regulation (EC) 66/2010, which states that "For specific categories of goods containing substances referred to in paragraph 6, and only in the event that it is not technically feasible to substitute them as such, or via the use of alternative materials or designs, or in the case of products which have a significantly higher overall environment performance compared with other goods of the same category, the Commission may adopt measures to grant derogations from paragraph 6. No derogation shall be given concerning substances that meet the criteria of Article 57 of Regulation (EC) No 1907/2006 and that are identified according to the procedure described in Article 59(1) of that Regulation, present in mixtures, in an article or in any homogeneous part of a complex article in concentrations higher than 0,1 % (weight by weight). Those measures, designed to amend non-essential elements of this Regulation, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 16(2)."

Because of the number of possible combinations of substances in preparations and recipes and the complex nature of footwear manufacturing, no specific concentration thresholds could be proposed. Concentration limits should be taken from the generic concentrations in CLP guidance or the specific concentrations listed in Annex 1 of the Regulation (EC) No 790/2009.

The hazard statements would be differentiated by splitting them into two hazard categories: A (the most significant hazards according to CLP Guidance[137] and those corresponding to the criteria in Article 57 of Regulation (EC) No 1907/2006); and B (lower level hazards according to CLP guidance), as indicated in Table 10. Based on the classification of hazard statements (Table 9), it

[136]Dodd, N. 2012. Revision of the EU ecolabel for textile products Summary of proposed Hazardous Substances criteria. Draft version. http://susproc.jrc.ec.europa.eu/textiles, last check: August 2013

[137] (ECHA, 2011) - Guidance on Labelling and Packaging in accordance with Regulation (EC) No 1272/2008

should be discussed with stakeholders which classes of substances can be derogated and which cannot using the definitions of two hazard categories.

The proposal is that substances exhibiting Category A hazards shall not be used. Category B substances could be used as long as certain derogation conditions are met, but they must be substituted within two years of the new criterion commencing, meaning that a timescale would be given to find substitutes. The two-year timescale period is proposed.

A specific formula for the derogation request and the substitute information to be submitted is set.

Table 10: Categorisation of hazard statements

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed (R28)	H301 Toxic if swallowed (R25)
H310 Fatal in contact with skin (R27)	H311 Toxic in contact with skin (R24)
H330 Fatal if inhaled (R23/26)	H331 Toxic if inhaled (R23)
H304 May be fatal if swallowed an enters airways (R65)	
H370 Causes damage to organs (R39/23/24/25/26/27/28)	H371 May cause damage to organs (R68/20/21/22)
Specific target organ toxicity	
Category 1	**Category 2**
H317: May cause allergic skin reaction (R43)	H317: May cause allergic skin reaction (R43)
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects (R46)	H341 Suspected of causing genetic defects (R68)
H350 May cause cancer (R45)	H351 Suspected of causing cancer (R49)
H350i May cause cancer by inhalation (R49)	
H360F May damage fertility (R60)	H361f Suspected of damaging fertility (R62)
H360D May damage the unborn child (R61)	H361d Suspected of damaging the unborn child (R63)
H360FD May damage fertility. May damage the unborn child (R60/61/60-61)	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child (R62/63)
H360Fd May damage fertility. Suspected of damaging the unborn child (R60/63)	H362 May cause harm to breast fed children (R64)
H360Df May damage the unborn child. Suspected of damaging fertility (R61/62)	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life (R50)	H412 Harmful to aquatic life with long lasting effects (R52/53)
H410 Very toxic to aquatic life with long-lasting effects (R50/53)	H413 May cause long-lasting effects to aquatic life (R53)
H411 Toxic to aquatic life with long-lasting	

effects (R51/53)	
Hazardous to the ozone layer	
EUH059 Hazardous to the ozone layer (R59)	

AHWG1 stakeholder feedback
Stakeholders have not submitted any official request for any derogation

Follow-up research

Articles 6(6) and 6(7) of the Ecolabel Regulation (EC) 66/2010 state that the Ecolabel may not be awarded to products containing substances classified with certain types of hazard, using REACH and CLP as their main reference points. The Regulation as it is written takes an approach based on the substitution of inherent hazards as opposed to reducing the risk of exposure from hazards.

This requirement is set out in two Articles, the first of which, Article 6(6), refers to specific groups of classifications under the CLP Regulation (EC) No 1272/2008 and to substances which meet the criteria described in Article 57 of the REACH Regulation (EC) No 1907/2006.

The second article 6(7) does, however, recognise that in certain circumstances there may be a technical or environmental justification for still using a substance restricted by Article 6(6). It describes how specific categories of goods containing substances referred to in Article 6(7) may be

There were no official derogations requests received for EU Ecolabel criteria revision for Footwear. As the basic proposal and starting point for further discussion it is, by the way of similarity, suggested to refer to EU Ecolabel criteria for "Textiles" and "Bed Mattresses" and to cross-check the derogation relevance for the footwear product group. The following table presents the substances derogated in the mentioned product groups with the preliminary analysis of possible reference to the product group footwear.

The introduction of 3% w/w threshold reflects the proposal set in the Framework of the on-going revision process .

Derogation for Nickel in stainless steel have been yet introduced considering that if nickel is present as an alloy, the associated hazard statements do not apply.

Table 11: Derogations of possible reference to the product group "Footwear"

Substances that impart function to the final product			**Applicability to footwear**
Substance group	**Derogated hazard classifications**	**Derogation conditions**	
All materials	All hazard statements	The material threshold of 3% w/w as specified in the framework to this Decision.	Final product
Nickel *(only present in bed mattresses EU Ecolabel)*	~~H317~~, H351, H372	Nickel shall be contained in stainless steel.	Metal toe-caps and accessories
Antimony Trioxide – ATO	H351	ATO shall be used as catalyst in polyester or as flame retardant	Textiles

Substances that impart function to the final product			Applicability to footwear
Substance group	**Derogated hazard classifications**	**Derogation conditions**	
(only present in bed mattresses EU Ecolabel)		synergist in textiles made of acrylic, cotton and polyester. Emissions to air in the workplace where ATO is applied shall meet an eight hour occupational exposure limit value of 0.5 mg/m³.	
Dyestuff for dyeing and non-pigment printing	H301, H311, H331, ~~H317~~, H334	Dust free dye formulations or automatic dosing and dispensing of dyes shall be used by dye houses and printers to minimise worker exposure	Dyes
	H411, H412, H413	Dyeing processes using reactive, direct, vat, sulphur dyes with these classifications shall meet a minimum of one of the following conditions: - Use of high affinity dyes; - Achievement of a reject rate of less than 3.0% - Use of colour matching instrumentation; - Implementation of standard operating procedures for the dyeing process; - Use of colour removal to treat wastewater in compliance with criterion 16a) The use of solution dyeing and/or digital printing are exempted from these conditions.	Dyes
Flame retardants	~~H317~~ (1B), H373, H411, H412, H413	- The product must be intended to be used in applications in which it is required to meet fire protection requirements in ISO, EN, Member State or public sector procurement standards and regulations. - The product shall meet the requirements for durability of function	Flame retardants e.g. Under Directive 89/686/EEC
	H351 is derogated for the application of antimony trioxide synergist as a backcoating for interior textiles.	- The product must be intended to be used in applications in which it is required to meet fire protection requirements in ISO, EN, Member State or public sector procurement standards and regulations. - Emissions to air in the workplace where the flame retardant is applied to the product shall meet an eight hour occupational exposure limit value of 0.50 mg/m3.	Flame retardants e.g. Under Directive 89/686/EEC
Optical brighteners	H411, H412, H413	Optical brighteners may only be applied in the following cases: - In white coloured printing;	Optical brighteners

Substances that impart function to the final product			Applicability to footwear
Substance group	**Derogated hazard classifications**	**Derogation conditions**	
		- To achieve enhanced brightness in uniforms and work wear; - As additives during the production of polyamide and polyester with a recycled content.	
Water, dirt and stain repellents	H413	- The repellent and its degradation products shall be readily and or inherently biodegradable and nonbioaccumulative in the aquatic environment, including aquatic sediment. - The product shall meet the requirements for durability of function	Water reppellency
Glues and adhesives *(only present in bed mattresses EU Ecolabel)*	H304, H341, H362, H371, H373, H400, H410, H411, H412, H413, EUH059, EUH029, EUH031, EUH032, EUH070, ~~H317~~, H334	Glues and adhesives used shall respect criterion 4.	Glues and adhesives
Other residual substances that may be found on the final product			
Auxilliaries comprising: Carriers, Levelling agents, Dispersing agents, Surfactants, Thickeners, Binders.	H301, H311, H331, H371, H373, H317 (1B), H334, H411, H412, H413, EUH070,	Recipes shall be formulated using automatic dosing systems and processes shall follow standard operating procedures. Substances classified with H311, H331, H317 (1B) shall not be present on the final product at concentrations of greater than 1.0% w/w.	Auxiliaries

The rationale behind that table have been developed within the context of EU Ecolabel for Textiles and Bed Mattresses being summarised as follows:

- Dyes: A range of CMR, carcinogenic or allergenic dyes already form part of the proposed RSL. Two areas of possible derogation have been identified by stakeholders from the Textile working group:
    - H334,H317 : Dyes carry these classifications because of their characteristics in dust form. Given the minimal risk that in most cases properly dyed garments pose to consumers (as identified by the testing studies reviewed), the most relevant exposure pathway may therefore be their handling by workers.
    - H412,H413: The Blue Angel has derogated dyes from these classifications because it would exclude most common dyes. Dye fastness and efficient rinsing off of fabrics to avoid the wash out of dyes during use of textile products, coupled with the degradation of residual dyes by wastewater treatment works at the manufacturing stage therefore appear to be the most practical ways of minimising exposure risks.

- Carriers and levelling agents: These substances are used to assist with the dyeing of polyester fabric. They can be classified with a significant number of H Statements, including H Statements H300-362. Consumer risk can be minimised by careful dosing and the efficient rinsing off of fabrics. Carriers can be avoided by dyeing polyester at higher temperature and pressures, but this increases other environmental impacts through greater energy use.
- Finishes: Some easycare, softeners, water repellents and flame retardants are classified with acutely toxic, CMR and aquatic environment hazards that may lead to exposure of workers from VOC emissions in the factory, the environment from the rinsing off of fabrics and consumers as a result of leaching from a fabric during use. Many of these hazard statements are identified in the proposal EU Ecolabel criteria. Exposure can therefore be minimised at source in the factory through adequate health and safety measures, process control to ensure fixation, and through the selection of finishes with a high level of fastness.
- Coatings, laminates and membranes: Some of these additional elements of a fabric or product may, depending on their content, contain phthalates and perfluorocarbons. Relevant acute toxicity, CMR and aquatic environment hazard statements are identified in the current criteria. Specific restricted substances are now contained within the proposed RSL.
- EUH 029, 031, 032: Industry stakeholders from the Textile EU Ecolabel stated that use of substances carrying these classifications would not permit the operation of textile processes. The hazardous substance screening we carried out against the CLP database did not identify any substances with these classifications;
- The use of antimony trioxide as catalyst in polyester. The REACH dossier for ATO classifies this substance as H351 - suspected of causing cancer. Hazards seems primarily associated to inhalation exposure during manufacture. Referencing to recently peer-reviewed scientific research[138] industry reported that the use of ATO in mattresses is safe for both the environment and human health. Moreover, workplace safety is guaranteed by complying with the Occupational Exposure Limits (currently 0.5 mg/m³).

Proposal

For the specific derogations, it is proposed to look for synergy with EU Ecolabel for Textiles and Bed Mattresses, as presented in Table 11.:

Question:

- Is the analysed applicability of derogations granted for other EU colable product groups substantiated?
- Is there any additional derogation requirement that should be analysed?
- Hazard statement H317 considering direct and prolonged skin contact of footwear.
- Possible derogation should further be discussed with stakeholders

The supply chain of the fashion industries is characterised by a high degree of complexity resulting from a large number of necessary steps and operations, from the raw material to the product in the shop, and by a high degree of dispersion among the many players. This dispersion affects both the actual and virtual supply chains, and is a major obstacle to the further development of the fashion industry.

[138] http://apps.echa.europa.eu/registered/data/dossiers/DISS

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- The verification that refers only to the SDS was assumed as doubtful, as the SDS addresses the presence of SVHC substances over the concentration 0.1%. The requirement was perceived by some stakeholders as not possible to be verified, especially when lacking available testing method.
- Art 6.6. of the EU Ecolabel Regulation 66/2010 permits the use of substances within the production process as long as these substance do not appear in the final product, therefore specific requirements that addresses them (in the final product) should be introduced. Request was raised for specification of substances that should be banned.
- The 3% cut off limit was recalled as not workable for hazardous substances criteria as 0.1% level was decided.
- It was observed that substances yet banned by REACH Regulation do not require to be re-stated, as they should not be present in the product. The only situation in which this requirement could be justified is the production outsourcing.
- Harmonization between different product groups was perceived as the right approach.

Follow up and proposals

General

Given the broad range of chemical substances and formulations used within the footwear manufacturing supply chain, the implication of Art. 6.6. of the EU Ecolabel Regulation 66/2010 could be significant. The new criterion raised general concern from stakeholders about its practicality

Out of the many chemicals used within footwear supply chain from raw materials production to final product assembly, not all will be found in the finished product, mostly depending on the specific physical and chemical properties of the chemical and when they are used in the process. By the way of similarities, most chemicals in the finished textile derive from the dyeing/printing and finishing during the manufacturing process[139]. The European rapid alert system for non-food dangerous products (RAPEX) reports products that are hazardous to consumer health on its system for a number of hazardous chemicals (but not all), when levels of these chemicals exceed the regulatory limits, as well as the regulatory or voluntary action taken. A search performed in March 2014 produced 87 results of chemical risk since 2010 (out of a total of 14,075 total entries) with the key word 'footwear' or 'shoes'[140]:

- Cr(VI): 121 entries
- DMF: 76 entries
- PCP: 5 entries

[139] KEMI 2013

[140] http://ec.europa.eu/consumers/safety/rapex/alerts/main/index.cfm?event=main.search

- Azo dyes: 9 entries
- Phtalates: 4 entries
- Nickel realese: 4 entries

However, other hazardous chemicals, which are also found in footwear products do not appear to be included on the RAPEX system. For example, there are no entries for nonylphenol ethoxylates, the perfluorinated chemicals PFOS and PFOA, organotins or flame retardants.

The RAPEX findings demonstrated that poorly regulated production can also result in greater risks of exposure because substances restricted by REACH may be used e.g. azo dyes which cleave to aryl amines.

The Safety Data Sheet addresses substances and mixture used during production process. The requirements should refer to the final product. The matrix applied for screening of chemicals[141] of potential presence in the final product assisted in identifying and understanding of those chemicals that may be found in finished products.

Given the potential complexity of applying this criterion to footwear products it is important that the approach proposed is practical to implement and reflects industry best practices. The environmental improvement potential must also be balanced against the relative importance of the other EU Ecolabel criteria and the capacity of industry to respond. Guidance from ECHA emphasises the need to minimise testing, preferring disclosure by suppliers instead. The notion of avoiding the use of hazardous substances at source should be prioritize. Considering the feasibility of a potential applicant to trace-back the use of certain chemicals, it is proposed to require verification from the footwear manufacturer and/or material supplier.

Testing if carried out should be targeted and a quota set for the minimum amount required. It was felt therefore that the criterion could be framed in a way that it does not restrict the use of important chemicals that are fundamental to certain processes, and focus on the production stages of main relevance. As a minimum, the following group of substances shall be verified such as:

- biocides,
- dyestuff (including pigments and varnishes),
- auxiliary carriers, levelling, blowing and dispersing agents,
- fatiquoring agents,
- solvents,
- print thickeners, binders, stabilizers, and plasticizers,
- flame retardants,
- cross linking agents,
  water dirt and stain repellents.

Determining the hazard classification of substitutes: modified assessment and verification:

The complete picture of a substances hazard classification may not be readily available. Based on the discussions with ECHA it has been identified that this may be the case because of a number of factors:

- Substances are progressively being registered under REACH and so a substance may not be registered yet;

[141] Methodology explained within the technical analysis of Criterion 7

- Data gaps may exist in the hazard classifications for a substance and these may only be filled once testing proposals have been evaluated and agreed by ECHA;

- Where a substance has not been registered there may only be self-classifications to use as a reference point. These can be divergent depending on the state/form of the substance and, moreover, depending on the knowledge/expertise of the notifier they may not correspond to the final EU classification;

- Joint submissions and entries in the REACH registration database tend to provide greater confidence in the hazard classification because, as is encouraged by the REACH system, test data is shared by manufacturers;

- Harmonised classifications are only made where Member States or stakeholders make a proposal, as a result harmonisation may only focus on specific hazards associated with a substance.

- Adaptations to Technical Progress (ATPs) have resulted in changes to the classification rules, which may mean that self-classifications are incorrect.

- Data for low tonnage bands may more limited so, for example, there is the potential for gaps for hazards such as CMR which require longer term test data.

Because of these factors it may not therefore be possible to make a clear decision on a substances classification. It was therefore decided that, with input from ECHA, a decision making tool should be developed in order support the process. The resulting decision tree is presented in Figure 3.

The applicant should provide information from the product screening against the latest classification, followed by verification of the REACH registered data base. In case of data missing the number of options is given to provide information sufficient to conclude on the classifications. Accordingly, assessment and verification text was adapted. Whilst the option exists to accept the self-classifications made, cross checking a hazard assessment by an ECHA peer agency provides a potential means of filling the classification gaps and also highlights potential discrepancies in the self-classification for certain end-points.

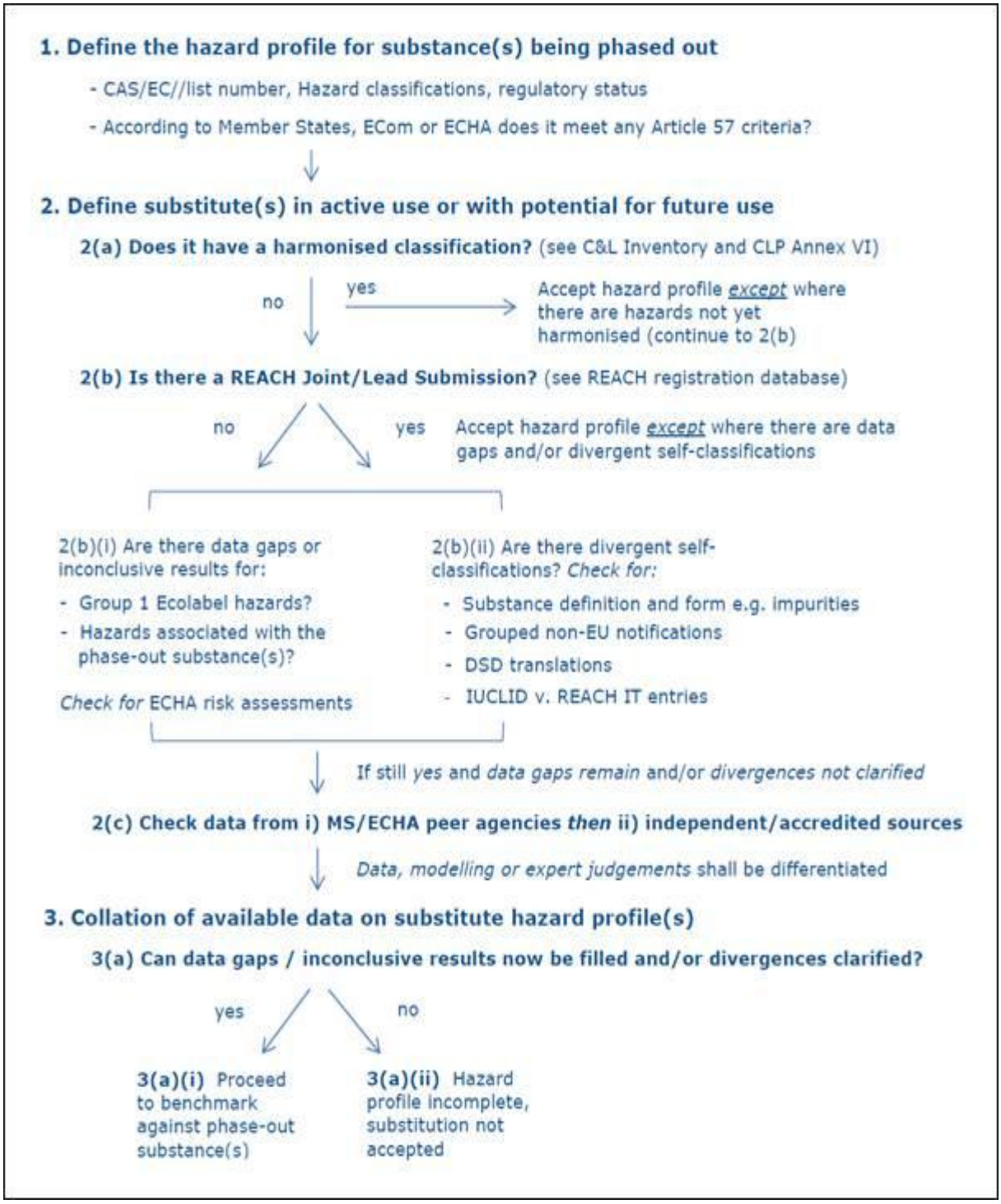

Figure 3. Decision tree used to determine hazard classifications

Threshold

3% threshold refers to those materials/components weight (e.g. plastic, textile, leather, rubber elements) that will be screened for hazardous substances whereas 0.1% to the chemical substance content in the final product. The possible introduction of fixed weight threshold (g/unit) was assessed as not straightforward considering differences in weight in different footwear product units. Similar approach to introduce the % cut-off limit for the material weight is observed in other Ecolabel schemes of relevance (e.g. Blue Angel criteria for footwear).

Derogations:

As presented and agreed during the technical meetings, the proposed derogations stem from the harmonisation with other EU Ecolabel product groups, especially EU Ecolabel for textile[142].

The functions derogated within EU Ecolabel revision for textile was agreed by stakeholders during several rounds of consultation The derogation applicability to the product group footwear was cross-checked considering similarity of processes ran (e.g. dye house, auxiliaries used, membranes technology) as stated in Table 3. In reference to Textile EU Ecolabel the following modification was introduced:

- PET production requires the use of catalysts such as antimony oxides or antimony acetate to regulate polymerisation. The derogation for the use of ATO in polyester textile backcoatings and flame retardants was removed as not being of relevance for the product group footwear. The possible presence of residual antimony in raw polyester is required to be verified by fibre manufacturer under Criterion 7.

[142]http://susproc.jrc.ec.europa.eu/textiles/docs/131021%20Ecolabel%20Textiles_EUEB%20vote_Technical%20report%20final.pdf

2.3.6 CRITERION 7: Restricted Substance List

Main proposed changes

The proposal reflects the output of the up-to-date information gathered from product screening against legal requirements, restricted substances lists, other Ecolabels type I of relevance, and industry best practices. It also takes into account the complexity of the footwear supply chain, and verification ability of footwear manufacturer.

The substances screening matrix was whenever possible structured in line with Horizontal Task Force approach. Functional substances are identified as they relate to sub-components and then substitutions and/or restrictions are identified based on publicly available information collated. An initial analysis of evidence is then provided, together with questions that arise from each substance group.

The primary proposal was to integrate this criterion into proposed Criterion 6.

After the AHWG 1 Meeting in October 2013 and following consultation process, in order to improve the clarity of the criteria document the former criterion 4 is proposed to be integrated into Criterion 7 and renamed to "Restricted Substances List" specified in the Appendix to criteria document (the RSL proposal is set in 0).

The proposal includes information gathered from the Hazardous substances sub-group as proposed by the EU Ecolabel's Chemical Horizontal Task Force. The sub-group was formed in order to specifically address requirements on substances assessed as of high relevance to the product group footwear.

In order to reflect industry best practices, the biodegradability requirements for surfactants, softeners and complexing agents was introduced in-line with the EU Ecolabel criteria for textile, and after analysis of information set in BREF for Tanning of Hides and Skind (2013). This proposal should however be verified within the consultation process..

Present criterion 4, Decision 2009/563/EC
(a) Pentachlorophenol (PCP) and Tetrachlorophenol (TCP) and its salts and esters shall not be used. Assessment and verification: the applicant and/or his supplier(s) shall provide a declaration that the materials do not contain such chlorophenols along with a test report using the following test methods: Leather, EN ISO 17070 (limit of detection 0,1 ppm); Textile, XP G 08-015 (limit of detection 0,05 ppm) (b) No azo dyes shall be used that may cleave to any of the following aromatic amines (...) Assessment and verification: the applicant and/or his supplier(s) shall provide a declaration that such azo dyes have not been used. Should a verification of this declaration be carried out, the following test methods shall be used: Leather — CEN ISO TS 17234; Textile — EN 14362 1 or 2. Textiles limit 30 ppm (note:false positives are possible for 4-aminoazobenzene and confirmation is therefore recommended); Leather limit 30 ppm (note: false positives are possible for 4-aminoazobenzene, 4-aminodiphenyl and 2-naphthy-lamine and confirmation is therefore recommended). (c) The following N-Nitrosamines shall not be detected in rubber — N-nitrosodimethylamine (NDMA) — N-nitrosodiethylamine (NDEA) — N-nitrosodipropylamine (NDPA) — N-nitrosodibutylamine (NDBA)

— N-nitrosopiperidine (NPIP)
— N-nitrosopyrrolidine (NPYR)
— N-nitrosomorpholine (NMOR)
— N-nitroso N-methyl N-phenylamine (NMPhA)
— N-nitroso N-ethyl N-phenylamine (NEPhA)
Assessment and verification:the applicant shall provide a test report, using test method EN 12868 (1999-12) or EN 14602.
(d) C10-C13 chloralkanes shall not be used in leather, rubber or textile components.
Assessment and verification: the applicant and/or his supplier(s) shall provide a declaration that such chloralkanes have not been used.
(e) No dyes meeting the criteria for classification as carcinogenic, mutagenic toxic to reproduction, hazardous/dangerous to the environment with the following R-phrases: R40, R45, R49, R50, R51, R52, R53, R60, R61, R62, R63 or R68 (or any combination), shall be used. (Classification rules as according to Council Directive 67/548/EEC or Directive 1999/45/EC of the European Parliament and of the Council.
Alternatively, classification may be considered according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council. In this case no substances or preparations may be added to the raw materials that are assigned, or may be assigned at the time of application, with the following hazard statements (or combinations thereof): H351, H350, H350i, H400, H410, H411, H412, H413, H360F, H360D, H361f, H361d H360FD, H361fd, H360Fd, H360Df, H341.
Assessment and verification: the applicant shall provide a declaration of non-use of such dyes.
(f) Alkylphenol ethoxylate (APE), and Perfluorooctane sulfonate (PFOS) shall not be used.
Assessment and verification: the applicant shall provide a declaration of non-use of such substances.
(g) No dyes meeting the criteria for classification as sensitising to skin (R43) shall be used. (Classification rules as according to Directive 67/548/EEC or Directive 1999/45/EC). Alternatively, classification may be considered according to Regulation (EC) No 1272/2008. In this case no substances or preparations may be added to the raw materials that are assigned, or may be assigned at the time of application, with the following hazard statement: H317.
Assessment and verification: The applicant shall provide a declaration of non-use of these dyes.
(h) Phthalates: Only phthalates that at the time of application have been risk assessed and have not been classified with the phrases (or combinations thereof): R60, R61, R62, R50, R51, R52, R53, R50/53, R51/53, R52/53, in accordance with Directive 67/548/EEC, may be used in the product (if applicable). Additionally DNOP (di-n-octyl phthalate), DINP (di-isononyl phthalate), DIDP (di-isodecyl phthalate) are not permitted in the product.
Assessment and verification: The applicant shall provide a declaration of compliance with this criterion.
(i) Biocides: Only biocidal products containing biocidal active substances included in Annex IA of the Directive 98/8/EC of the European Parliament and of the Council, and authorised for use in footwear, shall be allowed for use.
Assessment and verification: The applicant shall provide a declaration that the requirements of this criterion have been met along with a list of biocidal products used.

Criteria Proposal (2nd AHWG), May 2014

Criterion 7: Restricted Substances List

The final product, specified production recipes, or materials used to manufacturer final product shall not contain hazardous substances specified in the Restricted Substance List (RSL) at or above the concentration limits specified. The RSL can be found in Appendix III (proposal in 0). The RSL refers to defined production stages, product functions, or materials for which verification is required. The restrictions set in RSLs take precedence over the derogations listed in Criterion 6 (a).

The RSL shall be communicated to suppliers and agents responsible for the different stages of production. Verification and testing requirements are specified in the RSL for the production stage, material or for the final product.

Laboratory testing, where required, shall be carried out for each product line based on random sampling. Testing shall be carried out annually during the license period in order to demonstrate ongoing compliance with the RSL.

Assessment and verification: The applicant shall provide a declaration of compliance with the RSL supported by evidence as applicable to the substances and production recipes used to manufacture the material or the final product. The specific requirements are indicated in the RSL and include declarations obtained from those responsible for related production stages, declarations from chemical suppliers and test results from laboratory analysis of samples of the final product.

Declarations obtained from production stages shall be supported by Safety Data Sheets (SDS) for production recipes and, where necessary, declarations from chemical suppliers. Safety Data Sheets shall be completed in accordance with the guidance in Section 10, 11 and 12 of Annex II of Regulation (EC) 1907/2006 (Requirements for the Compilation of Safety Data Sheets). Incomplete Safety Data Sheets (SDS) will require supplemental declarations from chemical suppliers.

Laboratory analysis of the final product shall be performed for specific product lines, where specified in the RSL and according to the test methods listed. Testing, where required, shall be performed upon application and once a year thereafter on a random basis for each product line, with results then communicated to the relevant Competent Body. Test data obtained for the purposes of compliance with industry RSLs and other footwear certification schemes shall be accepted where the test methods are equivalent and have been performed on a representative sample of the final product. A failing of a test result during a license period shall result in retesting for the specific product line. If the second test fails, then the license shall be suspended for the specific product line. Remedial action consisting of an evaluation report identifying the reasons for test failure followed by achievement of a compliant test result will be required in order to re-instate the license.

Criteria Proposal, November 2014

The final product, composing materials and production recipes, shall not contain hazardous substances specified in the Restricted Substance List (RSL) at or above the indicated concentration limits or according to the specified restrictions. The RSL can be found in Appendix I. The restrictions set in RSLs take precedence over the derogations listed in Criterion 6 (a) Table 3. The RSL shall be communicated to material suppliers. Verification and testing requirements are specified in the RSL for the production stage, specific substances, materials, and for the final product.

Laboratory testing shall be carried out for each product line based on random sampling. Where specified, testing shall be carried out annually during the license period in order to demonstrate ongoing compliance with the criterion. Changes in suppliers and production sites pertaining to licensed products shall be notified to Competent Bodies, together with results of laboratory testing that demonstrate the compliance with the RSL.

Parts of the product composed of textiles that are awarded with the EU Ecolabel based on the ecological criteria of the Commission Decision 2014/350/EU comply with the Criterion 7.

Assessment and verification: The applicant shall provide a declaration of compliance with the RSL supported by evidence as applicable to the substances and production recipes used to

manufacture the composing material, or to the final product. The requirements are indicated in the Restricted Substances List (RSL) and include declarations obtained from those responsible for related production stages, declarations from chemical suppliers and test results from laboratory analysis of samples of the final product. Declarations obtained from production stages shall be supported by Safety Data Sheets (SDS) for production recipes and, where necessary, declarations from chemical suppliers. Safety Data Sheets shall be completed in accordance with the guidance in Section 10, 11 and 12 of Annex II of Regulation (EC) 1907/2006 (Requirements for the Compilation of Safety Data Sheets). Incomplete Safety Data Sheets (SDS) will require supplemental declarations from chemical suppliers.

Laboratory analysis of the final product shall be performed for specific product lines, where specified in the RSL and according to the test methods listed. Laboratory testing shall be carried out for each product line based on random sampling. Where specified, testing shall be carried out annually during the license period in order to demonstrate ongoing compliance with the RSL criterion with results then communicated to the relevant Competent Body. Test data obtained for the purposes of compliance with industry RSLs and other footwear certification schemes shall be accepted where the test methods are equivalent and have been performed on a representative sample of the final product. Failure of a test result during a license period shall result in retesting for the specific product line. If the second test fails, then the license shall be suspended for the specific product line. Remedial action consisting of an evaluation report identifying the reasons for test failure followed by achievement of a compliant test result will be required in order to re-instate the license.

The applicant shall demonstrate the compliance with the criterion regarding the parts of the product composed of textiles that are awarded with the EU Ecolabel by providing a copy of the EU Ecolabel certification with a proof that this was awarded in accordance with the Commission Decision 2014/350/EU.

The functional and residual substances highlighted under criterion that might be present in the final product will already be banned indirectly through the new proposed criterion on hazardous substances, the so-called horizontal approach. However, concerns over specific chemicals potentially used in the production process, such as biocides, phthalates, Short-Chain Chlorinated Parrafins, perfluorochemicals (PFCs), certain dyes, and other auxiliary substances, highlight the importance of their specific listing. There should be no additional costs associated with this criterion above those incurred already through the new horizontal ban and proposed RSL. .

AHWG1 stakeholder feedback

The introduction of the restricted substances list was generally supported, especially considering its practical implementation in the sector. The new criterion raised general concerns from stakeholders about its practicability. The criterion and its environmental improvement objectives should be balanced against the overall criteria complexity and the relative importance of other criteria.

Some stakeholders suggested that the EU Ecolabel should avoid referring to existing schemes (ex. Other ecolabels, RSL from industries…) to establish the list of restricted hazardous substances and their limits.

Some stakeholders have pointed out the importance to specify for each substance the production stage to which the restriction applies, mainly because of the complexity of the supply chain and the need to pass straightforward information down the supply chain. It was also suggested that the prove of compliance should refer to the specific materials in which the substance might be potentially present, mainly to avoid additional costs.

The requirement to set the minimum values has been raised considering that "not detectable" can differ between laboratories. It may also not be possible to cover all mentioned substances as for some of them the standard method have not been developed. The declaration should relate to actual substance/process in the manufacturing and the verification procedure should be mainly based on the declarations, whereas tests should be performed for very specific substances e.g. chromium VI. The development of 'compliance statements' as declarations coming from supplier/retailer collaboration have been proposed, stating that laboratory tracing should be preferable but would depend on cost.

In addition, some stakeholders have proposed different limits than suggested in the preliminary proposal.

Follow up research

Seeking the consensus and support of stakeholders, including Member States, industry and NGOs representatives, and with reference to the findings of the EU Ecolabel's Chemical Horizontal Task Force, an approach to criteria development was proposed consisting (in summary) of:

1. Cross checking of other schemes was taken as the starting point for further analysis. It is done according to EU Ecolabel Regulation 66/2010 Art 6.3. f): criteria established for other environmental labels, particularly officially recognised, nationally or regionally, EN ISO 14024 type I environmental labels, where they exist for that product group so as to enhance synergies.
2. Characterisation of the main materials, parts and components relevant to product group Footwear;
3. Screening of functional additives, coatings and treatments applied to materials or components for their potential hazards and/or exposure risk along the products lifecycle. Process residues and contaminants of concern are also addressed;
4. Identification of the main parts of the product in which hazardous substance substitution and/or restrictions have been implemented by manufacturers in mainstream products;
5. Identification of relevant Candidate List and Article 57 substances by reference to European Commission initiatives, and Member State intentions;
6. References to industry Restricted Substances Lists

Methodology for the analysis

The substances screening matrix is whenever possible structured in line with Horizontal Task Force approach according to the following scheme:

1. Component and sub-components;
2. Substance group (Broad description);
3. Function;
4. What is used (Which substance are currently used);
5. Best practice identified (Substitutions and/or restrictions identified that have been implemented in mainstream products);
6. Summary evaluation of evidence (Discussion of evidence supporting substitutions and/or restrictions);
7. Questions and information gaps (For follow-up with stakeholders in order to address information gap).

Functions are identified as they relate to sub-components and then substitutions and/or restrictions are identified based on publicly available information collated. An initial analysis of evidence is then provided, together with questions that arise from each substance group.

Of the many chemicals used within footwear supply chain from raw materials production to final product assembly, not all will be found in the finished product, mostly depending on the specific

physical and chemical properties of the chemical and when they are used in the process. By the way of similarities, most chemicals in the finished textile derive from the dyeing/printing and finishing during the manufacturing process. The European rapid alert system for non-food dangerous products (RAPEX) reports products that are hazardous to consumer health on its system for a number of hazardous chemicals (but not all), when levels of these chemicals exceed the regulatory limits, as well as the regulatory or voluntary action taken. A search done in March 2014 produced 221 results of chemical risk since 2010 (out of a total of 14,075 total entries) with the key word 'footwear' or 'shoes' :

- Cr(VI): 121 entiers
- DMF: 76 entiers
- PCP: 5 entries
- Azp dyes: 9 entries
- Phtalates: 4 entries
- Nickel realese: 4 entries
- PCP: 2 entries

However, other hazardous chemicals, which are also found in footwear products do not appear to be included on the RAPEX system. For example, there are no entries for nonylphenol ethoxylates, the perfluorinated chemicals PFOS and PFOA, organotins or flame retardants.

General Proposal

The use of the terminology "not detectable" will be erased from the RSL because it is not clear and it depends on the method used. Instead:

- The current detection limit will be chosen in line with the identified analytical method of reference.
- The substances screening matrix was whenever possible structured in line with Horizontal Task Force approach. Substance functionality (Function) was identified in relation to sub-components and then substitutions and/or restrictions are identified based on publicly available information collated. An initial analysis of evidence is then provided, together with comments provided by stakeholders.
- The draft proposal of the Restricted Substance list for EU Ecolabel criteria for Footwear is set as Annex VI to the present Technical Report.

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- The existence of international standards was assumed as necessary for the cross-laboratory data comparison. Stakeholders provided information on the available test methods. Several tests methods were proposed to be verified, being substituted by these of common practice within footwear industry.
- The assessment and verification was perceived as too precise being proposed to be integrated into the User manual.
- The need to change wording from "total" to "extractable" chromium was notified. Testing method for heavy metals in textile was corrected.
- It was further proposed to restrict the use of Cr tanned leather for children products to

promote chromium-free tanning technology.

- The issue of PVC restriction was raised, considering the possible negative environmental impact during the entire life cycle. It was informed that less than 1% of PVC is in fact used in footwear, and that material itself cannot be considered as hazardous.

- Restriction of all nanomaterials was proposed for precautionary reasons until the introduction of comprehensive eco-toxicological assessment methodology. It was also stated that nanomaterials should be addressed one by one, not as the entire group.

An invitation to take part in the sub-group was sent out to registered stakeholders and EUEB members. The aim of the hazardous sub-group was defined as being to:

- *Steer the overall approach to be taken with regards to the Ecolabel Regulation and the substitution potential of the best performing products on the market;*
- *Assist in developing a better understanding of the substitution potential for the product group;*
- *Review substitution information and derogation requests;*
- *Advise on how verification could work.*

The preliminary proposal and additional consultation process was organised (in written form) followed by the conference call in July 2014.

Follow up research and proposals

Follow up research and respective changes, when necessary, related to the specific group of substances, are reflected under respective sub-chapters.

- Applicants will be required to verify identified product line or/and materials against RSL. The restrictions are either to be verified by declarations of no use, and Safety Data Sheet obtained from material suppliers, or where specified by laboratory testing, as applicable.

- Testing already carried out in support of other certifications shall be accepted in order to reduce the burden as long as the same testing method is used. Where testing is required it is to be carried out at the time of application.

- It was discussed within the HS sub-group that for specific substances such as extractable metals test should be carried out annually to provide consumers with greater assurance by ensuring continued compliance.

- Textile products awarded EU Ecolabel in line with Commission Decision 2014/350/EU are proposed to comply with the requirements of Criterion 7. Still, the final product testing should be performed, where applicable.

- PET production requires the use of catalysts such as antimony oxides or antimony acetate to regulate polymerisation. The derogation for the use of ATO in polyester textile backcoatings and flame retardants was removed as not being of relevance for the product group footwear. The possible presence of residual antimony in raw polyester is required to be verified by fibre manufacturer under criterion 7.

The most common catalyst of PET production is antimony (Sb). Antimony is present in 80 – 85% of all virgin PET[143]. Antimony used in the production of PET fibres becomes chemically bound to the PET polymer[144]. Antimony might however be present as a residue in polyester. Its content in commercial polyester fibres is cited to be in the range of 200 to 300 ppm[145]. Requirement on residual antimony content in raw polyester fibre was added to the RSL being harmonised with EU Ecolabel for textile according to the Commission Decision 2014/350/EU.

2.3.6.1 Biocides

Pesticides are used in farm animal husbandry to prevent animal pests, fly infestations, and beetle attacks on the animals. Furthermore, biocides can also be used to preserve the hides before they arrive into the tannery. Hence, it is possible that biocides are introduced into tannery through their main raw material (hides and skins). Biocides are also used in the textile industry to prevent deterioration by insects, fungi, algae and microorganisms, and to impart hygienic finishes for specific applications. Sensitivity of the fibres differs on a case-by-case basis, but textiles made from natural fibres are generally more susceptible to biodeterioration than synthetic man-made fibres[146]. The Biocidal Products Regulation (BPR, Regulation (EU) 528/2012)[147] addresses the marketing 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. This will repeal and replace the current directive on biocides (Directive 98/8/EC), which entered into force on 1 January 2013 and will be applicable from 1 September 2013, with a transitional period for certain provisions. According to this, all biocidal products require an authorisation before they can be placed on the market, and the active substances contained in that biocidal product must be previously approved by product type.

European Commission decisions on approval and non-approval of active substances are published in the Official Journal of the European Union. The European Commission keeps the list updated and available electronically to the public[148]. The European Commission includes approved active substances in the Union list of approved active substances (formerly Annex I of Directive 98/8/EC).

The Big 4 fungicides are commonly known by their abbreviations, for example, PCMC (para-chlor-metacresol), OIT (2-n-octylisothiazolin-3-one), OPP (ortho-phenylphenol), TCMTB (2-(thiocyanomethylthiobenzothiazole)[149]. Considering that biocides are not desirable products in EU Ecolabelled footwear, their use, understood as chemical preservation of raw or semi-finished material for transportation or storage, should be avoided to the greatest possible extent. Biocide shall not be incorporated into the final product in order to impart biocidal properties.

According to Blue Angel the preservatives used for protection during the transportation and storage of leather shall meet the following conditions for use on leather:

- 4-chloro-3-methylphenol < 600 mg/kg
- N-octylisothiazolinone < 250 mg/kg

[143] http://oecotextiles.wordpress.com/2013/02/06/antimony-in-fabrics/

[144] Shotyk, William, et al. 2006. Contamination of Canadian and European Bottled waters with antimony from PET containers, Journal of Environmental Monitoring,

[145] http://susproc.jrc.ec.europa.eu/textiles/docs/131021%20Ecolabel%20Textiles_EUEB%20vote_Technical%20report%20final.pdf

[146] Lacasse, K, Baumann, W. 2004. Textile Chemicals. Environmental data and facts. Institute fuer Umwelforschung. Dortmund. Springer Verlag

[147] More information available online at: http://echa.europa.eu/regulations/biocidal-products-regulation

[148] Last updated: 12th February 2013

[149] http://www.tfl.com/web/files/eco_gl3_small.pdf

- o-phenylphenol < 1000 mg/kg
- 2-(thiocyanomethylthio)benzothiazole < 500 mg/kg

The Nordic Swan requires that the biocides must comply the Biocide 98/8/EF Directive.

Follow up research

The application of biocides can take place in various stages of the footwear manufacturing process from raw material to finished product. According to stakeholders feedback clear division between the application function is necessary to avoid possible confusion: transport and storage form one site, and final product treatment from the other. Therefore the biocide requirements is proposed to be separated:
1. Transportation and storage of raw or semi-finish material (all production stages)
2. Referring to finishing process of the final product (finishing process, anti-microbial treatment)
3. Substances specifically restricted (all production stages/finishing process/final product)

Transportation and storage of raw or semi-finish material (all production stages)
The application of biocides to the raw or semi- finished materials aims at preservation from possible microbiological deterioration. Material after finishing should be properly dried and stored under the conditions that ensure the proper air flow, to avoid humidity raise, and mould growth.

Commercial biocides can contain a mixture of different active substances. In case of leather preservation the quaternum ammonium compound didecyldimethylammonium chloride (classified with H302 and H314, CAS 7173-51-5) is one of the most frequently used active ingredients against bacteria, added at a rate between 0.03 and 0.1% of hide weight[150]. Other substances that include anti-fungal activity might also be used usually at rates 0.02 and 0.1% by weight (sodium dimethyldithiocarbamate, N-hydroxymethyl-N-methyldithiocarbamate, Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione, 2-Thiocyanomethylthiobenzothiazole (TCMTB).

It was proposed to follow the restriction of biocides set in Blue Angel criteria for footwear: PCMC < 300 mg/ kg, OIT < 100 mg/kg, OPP < 500 mg/kg and TCMTB <500 mg/kg[151].

All biocides used must meet the requirements of the Biocidal Products Regulation (BPR). The evaluation of active substances is ongoing therefore the transition rules according Article 94 of EC 528/2012 should be respected.

According to the information gathered leather industry tend to reduce the use of biocides to the minimum technically feasible level, mainly because of high costs of biocidal treatment. If the use of biocidal substances is not possible to be avoided, appropriate and minimised use of registered industrial biocides should be encouraged. It is therefore proposed not to refer to specific biocidal products but rather those substances that are authorized to be used under Biocidal Directive 528/2012. This proposal is in line with EU Ecolabel criteria for Textiles and Bed Mattresses.

Referring to finishing process of the final product (finishing process, anti-microbial treatment)
What is used
Examples of biocidal products relevant for the analysed product group are: anti-moulding agents, material preservatives, disinfectants. Antimicrobial technologies are mainly based on metals and

[150] Best Available Technique (BAT) Reference Document for the Tanning of Hides and Skins. 2013. Joints Research Centre. Institute for Prospective Technological Studies. JRC Reference Reports.
[151] Specified in the Technical report

metal compounds (e.g. silver, copper, zinc, metal oxides, etc.). A few other compounds such as quaternary ammonium salts, borates, 2,4,4-trichloro- 2-hydroxydiphenil ether (Triclosan) or 3-iodo-2-propynyl-butylcarbamate (IPBC), etc., are also used[152,]

Alternatives:
The alternative is to use active carbon odour absorbing materials which have been shown to be effective in the past. A number of natural antimicrobial agents have also been identified over the last decades such as citral, nerol, citronellol, etc.

Summary of evidence found
One concern about possible micro-organism growth in footwear is related to the bad smell generated during the use of shoes. The biocidal treatment of footwear surface aims therefore at inhibiting bacterial growth in shoe interior.

According to the BPD requirements, the active agent used in article with incorporated anti-microbial property will need to be registered, independently of the geographical location of the production site. Furthermore an article that possesses biocidal properties will have to be labelled with information about the claim and about the active substances contained.

Within the consultation process it has been assessed that the use of biocide surface treatment of final product is not necessary in order to avoid the problem of footwear smell and possible bacterial growth. Several actions classified as basic footwear care principles should be adopted instead:
– Keep the foot dry and well ventilated
– Reduces the humidity
– Reduces the debris which is food for micro-organisms

It should however be mentioned that the consultation with footwear technical expert revealed that anti-microbial treatment of lining could be potentially beneficial in specific cases such as very highly water-resistant footwear or where individuals produce unusually high amounts of sweat. The correlation between the presence of micro-organisms and poor foot health with respect to issues such as athlete's foot should be nevertheless considered as a case-by case medical question.

Substances specifically restricted (all production stages/finishing process/final product)
On the base of RSLs comparison and in reference to other EU Ecolabel criteria it is proposes to specifically restrict following substances:

Chlorophenols (their salts and esters), polychlorinated biphenyl (PCB), organo-tin compounds (including TBT, TPhT, DBT and DOT) diemthyl fumarate (DMFu), triclosan, and nanosilver.

The applicant shall provide and shall make suppliers to provide a declaration of non-use, as appropriate, confirming that listed substances have not been used during the transportation or storage of the product, any article and any homogeneous part of it.

The biocide triclosan (CAS No. 3380-34-5) with a harmonised classification of H400 and H410 is restricted in some RSLs. The usual verification level is indicated as 50 mg/kg. The specific restriction of triclosan that requires verification by test method should be further discussed within the subgroup.

[152]Sánchez-Navarro et al. 2013. Latest Developments in Antimicrobial Functional Materials for Footwear. Microbial pathogens and strategies for combating them: science, technology and education (A. Méndez-Vilas, Eds.) © FORMATEX 2013

Studies have increasingly linked triclosan (and its chemical cousin triclocarban), to a range of adverse health and environmental effects from skin irritation, endocrine disruption, bacterial and compounded antibiotic resistance, to the contamination of water and its negative impact on fragile aquatic ecosystem. The Canadian government declared triclosan toxic to the environment, a move which would see the use of the chemical curtailed sharply in Canada. In March 2013, EPA opened the federal docket for triclosan, offically beginning the registration review of triclosan.[153]. In March 2014, Member State experts agreed with a European Commission proposal not to approve its use for three product groups under the EU's 2012 Biocides Regulation. This means that, for example, triclosan will no longer be used in textiles, leather and rubber, paints or plastic films[154]. Its safety is also being evaluated under REACH and it is a possible candidate for the Water Framework Directive's priority list.

Triclosan is commonly used by footwear industry; the feasibility to introduce specific restriction should be cross checked. According to preliminary information received it might be relatively difficult for suppliers to have test results and certification of no-use at the time of criteria revision.

In addition, it is suggested to:

- specifically list the restriction on use of Triclosan considering its common application in footwear.
- Specifically the restriction on the following biocides in alignment with the EU Ecolabels for Textiles and Bed mattresses:
  - Chlorophenols (their salts and esters)
  - Polychlorinated biphenyls (PCB)
  - Organotin compounds, including TBT, TPhT, DBT and DOT
  - Dimethyl fumarate (DMFu)

Questions:

- Is the criterion clarity improved by the proposed division of functional use of biocides?
- Is there any reason to apply biocidal treatment of final product (with the exlcusion of specific medical requirements)?
- Is the list of biocidal substances that requires specific restricted accepted?
- Considering the broad use of triclosane is its restriction feasible? If yes, shall specific testing requirement for triclosan be introduced?

Follow up research and proposed changes

In Annex V to the Biocide Regulation (EC) No 528/2012 the biocidal products are classified into 22 biocidal product-types, grouped in four main areas. The group 2 refers to active substances that prevent microbiological and algae development. Product type 6 and 9 are related to the product group footwear.

[153] http://www.beyondpesticides.org/dailynewsblog/?p=7151
[154] http://mst.dk/service/nyheder/nyhedsarkiv/2014/mar/slut-med-mistaenkeligt-kemikalie-i-toej/

Main group 2: Preservatives: *Unless otherwise stated these product-types include only products to prevent microbial and algal development.*		
Number	Product-type	Description
PT 6	Preservatives for products during storage	Used for the preservation of manufactured products, other than foodstuffs, feeding stuffs, cosmetics or medicinal products or medical devices by the control of microbial deterioration to ensure their shelf life. Used as preservatives for the storage or use of rodenticide, insecticide or other baits.
PT 9	Fibre, leather, rubber and polymerised materials preservatives	Used for the preservation of fibrous or polymerised materials, such as leather, rubber or paper 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.

- All biocidal products require an authorisation before they can be placed on the market, and the active substances contained in that biocidal product must be previously approved. The Biocidal Products Regulation (BPR, Regulation (EU) 528/2012) repeals and replaces the Directive 98/8/EC, with a transitional period for certain provisions.

  Existing substances have a time frame for re-evaluation according to the product type and application. Active substances under the review programme as well as biocidal products containing these active substances can be placed on the market while awaiting the final decision on the approval. Provisional product authorisations for new active substances that are still under assessment are also allowed on the market. Substances for which a dossier has been submitted for evaluation pending a decision on authorisation or non-inclusion may be used in the interim period up until the adoption of the Decision.

  Article 94 of EC 528/2012 specifies transitional measures concerning treated articles

  - *By way of derogation from Article 58 and without prejudice to Article 89, treated articles that were available on the market on 1 September 2013 may, until the date of a decision concerning the approval for the relevant product-type of the active substance(s) contained in the biocidal products with which the treated articles were treated or which they incorporate, continue to be placed on the market if the application for the approval of the active substance(s) for the relevant product-type is submitted at the latest by 1 September 2016.*

  - *In the case of a decision not to approve an active substance for the relevant product-type, treated articles which were treated with, or which incorporate, biocidal product(s) containing that active substance shall no longer be placed on the market 180 days after such a decision or as of 1 September 2016, whichever is the later, unless an application for the approval has been submitted in accordance with paragraph 1.*

- Concentration of biocide is highly variable and dependent on raw material and processing route. Biocides are added early on in processing, and varying amounts are lost due to physical removal (e.g. splitting, shaving, skiving, etc.) or physic-chemical degradation (e.g. washing, chemical interactions, UV light, thermal decomposition, etc.). Therefore verification was adapted to industry reality, reporting of concentration of biocides applied was withdrawn accordingly.

- Identification of H statements and R phrases of biocides used was perceived as additional burden, mainly considering that CLP classification of substances is not necessarily readily available online. Identification of the biocide active substance(s) was perceived as sufficient.

However, it is assumed that active substances should be risk assessed it is therefore proposed to maintain the requirement on H statements and R phrases identification.

- Following stakeholders' feedback, general reference to anti-moulding active substances used in the packaging of the final product during transportation and storage was introduced.

Dimethylfumarate (DMF)

Dimethylfumarate (DMF) is a mould inhibitor which is used to protect items in transit from attack by micro-organisms. Commission Decision 2009/251/EC of 17 March 2009 under the General Product Safety Directive (2001/95/EC) prohibits placing on the market (or being made available) products which contain dimethylfumarate. The decision has been incorporated into REACH (Annex XVII) under entry 61.

Follow up research

Dimethylfumarate can be found both in the final product and its packaging. It was cross - checked within sub-group if the specific testing of the packaging or requirement of no use should be applied Dimethyl fumarate is largely used during the transportation process when there is a risk of mould formation. DMFu is applied in form of salt crystals and sublimates at 70C, with the decrease of temperature the salts sediments on the packaging or final product.

According to the feedback received testing of footwear packaging was perceived as appropriate.

It is therefore proposed that an applicant and/or his supplier(s) shall provide a declaration that the final product and packaging used do not contain Dimethylfumarate along with a test report of the final product according to ISO/TS 16186.

Follow up research and proposed changes

The requirement to specifically control the use of dimethylfumarate in the packaging was perceived as double verification. The Criterion 12 was re-worded accordingly.

2.3.6.2 Organostannic compounds

Organostannic compounds are substances that contain the metal tin along with carbon, hydrogen and oxygen. Decision No. 2009/425/EC[155] establishes restrictions on the marketing and use of organotin (also referred to as 'organostannic') compounds. The Commission incorporated this Decision into Annex XVII of the REACH Regulation (Regulation 1907/2006) by Regulation (EU) No. 276/2010 under entry no. 20. The Decision (2009/425/EC) focuses on the di- and tri- substituted organotin compounds due to their broad applications in the market; for example, insoles for shoes, anti-microbial finishing in socks and sports clothes, additive during production of polyurethane foam, as a stabilizer in production of PVC, and as a catalyst in production of silicone. As of 1 July 2010, products containing tri-substituted organotin compounds with concentrations greater than 0.1% by weight of tin were not allowed on the market. The use of dibutyltin and dioctyltin compounds has been restricted starting on 1 January 2012.

Follow up research

Applicability:

[155] COMMISSION DECISION of 28 May 2009 amending Council Directive 76/769/EEC as regards restrictions on the marketing and use of organostannic compounds for the purpose of adapting its Annex I to technical progress.

The substance might be present n PVC, PUR, Silicon materials, other synthetic materials. *It is therefore proposed to perform testing of the final product.*

Function:
Organotin compound might be used as biocide, catalysts in plastic and glue production and heat stabilizers in plastic rubber.

Summary of evidence found
Test that specifically refers to organotin compunds in footwear is: ISO/TS 16179:2012.
The sum of tin organic compound according to the EU Ecolabel criteria for Bed Mattracces is 500 ppb in PU foam (test method used: gas chromatography with mass selective detection). The threshold introduced was reference to the CertiPUR label.

Blue Angel for Footwear introduces the following requirements for tin organic substances (test method ISO 17353):

- Tributylin compounds (TBT): 0.025 mg/kg
- Dibutylin compunds (DBT): 1 mg/kg
- Dioctyltin compunds (DOT): 1 mg/kg
- Monobutyltin compunds (MBT): 1 mg/kg
- Triphenytlin (TPT): 1 mg/kg

Table 3 shows the limit value set by CADS RSL according to the mentioned the test method ISO/TS 16179.

Table 12 Restriction on tinorganic compunds inctroduced by CADS RSL

Group of substances	**Substance**	**Limit value**	**Assessment and verification conditions**
Tinorganic substances	Tributyltin (TBT)	1 mg/kg	Test report ISO/TS 16179:2012
	Dibutyltin (DBT)	5 mg/kg	
	Monobutyltin (MBT)	5 mg/kg	
	Monooctyltin (MOT)	5 mg/kg	
	Dioctyltin (DOT)	5 mg/kg	
	Bis (tributylin)oxide (TBTO)	1 mg/kg	
	Triphenyltin (TPhT)	1 mg/kg	

During the consultation process within HS sub-group it was proposed to align the requirement on organostannic content with EU Ecolabel for Bed Matrasses. The values were cross checked with CertiPUR label and set as criterion proposal.

Questions:
- Is it technically feasible to align the requirement on organotin compunds with EU Ecolable for Bed Matrasses?

Follow up research and proposals

The threshold values proposed under revised Criterion 7 (RSL) stem from harmonization with Blue Angel criteria for Footwear. Testing method ISO/TS 16179[156] was perceived as appropriate, being developed for the product group footwear.

2.3.6.3 Nanosilver

The risks posed to the environment and human health by the nanomaterials should be assessed using the existing risk assessment approach in the EU. Based on the conclusions from the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)[157], there is still scientific uncertainty about the safety of nanomaterials in many aspects, such as: hazard identification, exposure, uptake, absorption and transport across membranes, accumulation in secondary target organs, possible health effects, translocation of nanoparticles via the placenta to the foetus and in vitro and in vivo test methods validated or optimized for nanomaterials.

The current methods used in REACH to assess the toxicological and ecotoxicological risk may not be adequate to evaluate the risks related to nanomaterials. Consequently, there is a lack of knowledge regarding the damage nanomaterials may cause. Therefore, the Commission is considering modifying some of the technical provisions in the REACH Annexes, and has launched a public consultation to this effect, which is open for input from 21 June 2013 until 13 September 2013.

Due to its antimicrobial activity, nanosilver (nAg) has become the most widely used nanomaterial in an increasing number of products. The most common application of nanosilver is as an antimicrobial agent in products such as wound dressings, textiles, food storage containers and personal care appliances. Relatively little is known about the potential risks of nanosilver. In particular, the cytotoxicity of nanosilver with respect to mammalian cells remains unclear, because such investigations can be biased by the nanosilver coatings and the lack of particle size control.[158] It is hypothesized that the toxic effects of nanosilver are due to a combination of the specific properties of silver nanoparticles and generation of ions from them.[159] Over-exposure to nanosilver particles can cause other potentially harmful organisms to rapidly adapt and flourish that is, exposure to excessive doses of silver ion-releasing nanoparticles may actually improve bacterial survival rates[160].

On the basis of the toxicology studies reviewed to date and the uncertainty associated with its possible environmental impacts, we propose a precautionary approach for the EU Ecolabel criteria. The requirement to restrict the use of nanomaterials is aligned with the requirement proposal established in the framework of the the on-going revision process of the EU Ecolabel for textile.

The Nordic Swan forbids the use of silver ions and nanosilver as antibacterial substances.

No additional feedback was provided

[156] Footwear -- Critical substances potentially present in footwear and footwear components -- Determination of organotin compounds in footwear materials

[157] http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_010.pdf

[158] Pratsinis A, Hervella P, Leroux J.C., Pratsinis S.E., Sotiriou G.A.2013. Toxicity of silver nanoparticles in macrophages. Small 9 (15), pp 2576-2584

[159] Wijnhoven, S.W.P., Peijnenburg, W. J.G.M., Herberts , C.A. et al. 2009. Nano-silver – a review of available data and knowledge gaps in human and environmental risk assessment. Nanotoxicology 3. Pp 109-138

[160] Gunawan, Yang Teoh, W., Marquis, C.P., Amal, R. 2013. Induced Adaptation of Bacillus sp. to Antimicrobial Nanosilver. Small, published online 29 APR 2013

Follow up research and proposals

It was proposed not to address nanomaterial's within the current revision mainly considering the lack of sufficient evidence and the need to perform case by case analysis.

In reference to nanosilver, on the basis of the available scientific literature reviewed to date and uncertainty associated with its possible environmental impacts, it is proposed to apply precautionary principle. Similar approach was observed within EU Ecolabel criteria development for textile.

2.3.6.4 Flame retardants

AHWG1 technical discussion

Flame retardants are used to prevent or retard products from igniting when exposed to flames. They are widely used in textile manufacturing, as mentioned in the working document produced during the current EU textile Eco label revision. It should be stated, that according to the preliminary consultation conducted, usage of flame retardants in footwear seems to be restricted to very specific protective requirements (e.g., fireman boots). Further consultation with stakeholders is necessary to determine if the use of flame retardants is relevant to the analysed product group.

Various RSL documents currently addressed textile and footwear together, therefore, it was not possible to identify flame retardants of concern for footwear. This point has to be discussed further during stakeholder consultation process.

Several schemes (e.g., The Blue Angel and the New Zealand Ecolabelling Trust) restrict the use of flame retardant substances or flame retardant preparations.

AHWG1 stakeholder feedback

Limited feedback was provided on this criterion. It was also stated that flame retardants are not used to achieve footwear flame retardancy. Referring to the yet developed list of flame retardants that addresses other EU Ecolabel product groups was perceived as not appropriate.

Introduction of the restriction on the use of halogenated flame retardants was specifically requested.

One stakeholders suggested the IEC 62321:2008 (GC/MS) to test Pentabromodiphenyl ether and Octabromidiphenyl ether. This norm applies to electrotechnical products.

It was also suggested to restrict the use of halogenated flame retardants because they might have a significant impact on the environment when footwear is treated at end of life.

Follow-up research

Best practices identified:

Alternatives to brominated flame-retardants exist for the leather industry. They include: syntans and the addition of melamine resins in the retanning process, selecting suitable fatliquors, ammonium bromide, Inorganic phosphorus compounds (such as ammonium polyphosphate), or silicon polymer[161].

[161] BAT Reference Document for Tanning of Hides and Skins. 2013. IPPC Bureau, JRC-IPTS

Summary of the evidence found

The daily footwear does not require specific heat protection and flame retardants are not used for in their finishing.

The need to specify restriction on flame retardance address the inclusion of PPE in the product group scope. Therefore use of flame retardants ***shall be permitted only in case of safety footwear*** when particular product performance requirements need to be met: e.g. fireman or welder boots (PPE Category III -for use against "mortal danger").

Limited feedback was provided on this criterion. It was also stated that flame retardants are in fact not used to achieve footwear flame retardancy.

It is proposed that for PPE footwear with incorporated flame retardance function the applicant provides a declaration supported by declarations from manufacturers with a specification of substances added to enhance the flame retarding properties, together with concentrations and related H statements / R phrases shall be provided. Additionally, compliance with the criterion 6 should be declared.

No test procedures are foreseen as suppliers should be aware of (or can identify) which substances are used to fulfil specific protective requirements. The listing of substances that are included in the Candidate List of SVHC or restricted according to the REACH Regulation, thus being covered by Criterion 6, is substantiated by the magnitude of the related environmental concern.

Questions:

- Does the criteria proposal reflect the current state of the art?
- Shall a specific fitness for use test be required or reference to PPE Directive requirements shall be done?

Follow up research and proposals

Restriction of the use of halogenated flame retardants was proposed.

Limited technical information was gathered on the specific substances used to achieve different flame resistance performance levels. It is therefore propose to:

- Allow the use of flame retardants only for Category III PPE footwear (when technically required to fulfil product protective function).
- For flame resistant footwear, to require compliance with Criterion 6 by Safety Data Sheet verification. The list of substances used to achieve flame resistance should be specified by producer.

2.3.6.5 Halogenated solvents and organic carriers

AHWG1 technical discussion

As mentioned in the AFIRM guidance document, solvents are widely used during the manufacturing process of footwear or footwear components, for example, solvent use to make adhesive or as dye carriers. Some solvents used in adhesive systems are toluene and benzene.

These substances may be a concern because of their potential environmental, workplace safety and consumer safety impacts. As highlighted by AFIRM, solvents may play a significant role as residuals.

The Blue Angel, Oko Tex, several RSLs restrict the use of chlorinated benzenes and toluenes in dyed synthetic fibers.

AHWG1 stakeholder feedback
Limited feedback was received concerning the use of halogenated solvents and organic carriers. One stakeholder highlighted that halogenated organic compounds may be used as blowing agents for plastics foams (typically PU).

Follow-up research

According to (Li et al., 2014)[162], blowing agents are one of the seven major industrial sources of halogenated compounds.

The proposal for the EU Ecolabel for bed mattresses restricts the use of halogenated organic coumpounds as blowing agents or as auxiliary blowing agents.

Proposal
As PU foam is used in footwear, it is suggested to align the requirement with the EU Ecolabel for Bed Mattresses.

2.3.6.6 PAHs

AHWG1 technical discussion
PAHs may be present in plastics, elastomers and rubber materials, and in lacquers, varnishes, paints and coatings. In addition to their other hazardous properties, some PAHs can be carcinogenic. Currently, eight PAH congeners are classified as known carcinogens (c-PAHs) in Annex VI of Regulation (EC) 1272/2008 (CLP regulation), as indicated in Table 13. The US Environmental Protection Agency has listed 16 different PAHs as priority environmental pollutants (EPA-PAH). The German authorities recommend that marketing and use of PAH contaminated products should be limited. In particular, the content of each of the eight PAHs legally classified as carcinogens should be restricted to a maximum concentration of 0.2 mg/kg in consumer products or any of their parts. The German committee' Technische Arbeitsmittel and Verbraucherprodukte(AtAV)' has decided to require mandatory testing of the presence of Polycyclic Aromatic Hydrocarbons (18 PAHs) for the GS-certification process[163].

[162] (Source identification and apportionment of halogenated compounds observed at a remote site in East Asia, 2014)
[163] "Geprüfte Sicherheit: any product bearing the GS Mark indicates that it was tested and complies with the minimum requirements of the German Product Safety Act.

Table 13: The comparison between GS Mark, REACH Annex XVII, and US EPA PAHs

Name	CAS NO	REACH Annex XVII	US EPA	GS MARK
Naphthalene	91-20-3		X	X
Acenaphthylene	208-96-8		X	X
Acenaphthene	83-32-9		X	X
Fluorene	86-73-7		X	X
Phenanthrene	85-1-8		X	X
Anthracene	120-12-7		X	X
Fluoranthene	206-44-0		X	X
Pyrene	129-00-0		X	X
Chrysene	218-01-9	X	X	X
Benzo[a]anthracene	56-55-3	X	X	X
Benzo[b]fluoranthene	205-99-2	X	X	X
Benzo[k]fluoranthene	207-08-9	X	X	X
Benzo[a]pyrene	50-32-8	X	X	X
Dibenzo[a,h]anthrancene	53-70-3	X	X	X
Indeno[1,2,3-c,d]pyrene	193-39-5		X	X
Benzo[g,h,i]perylene)	191-24-2		X	X
Benzo[j]fluoranthen	205-82-3	X		X
Benzo[e]pyren	192-97-2	X		X

On 31 October 2012, the European Commission (EC) submitted to the World Trade Organisation (WTO) its draft regulation on amending the restriction of polycyclic aromatic hydrocarbons (PAH), entry 50. The amendment is expected to be published by the 2nd half of 2013 and will apply in mid-2015. This extends the current PAH restriction to include rubber and plastic materials in consumer products such as toys, household utensils, tools for domestic use, sports equipment, footwear and clothing. If those articles fail to meet the PAH requirements, they cannot be placed on the EU market[164].

The Nordic Swan restricts the use of PAH in the mineral oil part of an auxiliary chemical to be lower than 3 % of the total weight. The New Zealand Ecolabelling Trust sets this limit at 1 %. The Oeko-Tex standard sets the limit to 5 mg/kg for the baby product class and to 10 mg/kg for other product classes. The AFIRM global RSL sets the limit at 10 mg/kg for 18 PAHs.

AHWG1 stakeholder feedback
It has been suggested to refer to the 18 PAHs of the ZEK document 01.4-08 "Testing and Validation of Polycyclic Aromatic Hydrocarbons (PAH) in the course of GS-Mark Certification".

Follow-up research
A number of branch RSLs identify lists of PAHs in their restriction lists. Up to 18 PAHs are identified in RSLs, some at higher concentration limits of 10-20 mg/kg and with sum concentration limits.

According to ZEK 01.4-08, the MCV (Maximum Concentration Values) of PAHs must comply with the following limits[165]:

[164] http://www.inmetro.gov.br/barreirastecnicas/pontofocal/textos/notificacoes/EEC_N_EU_73.pdf
[165] http://www.zls-muenchen.de/de/left/aktuell/pdf/zek_01_4_08_pak_verbindlich_engl_30112011.pdf

Table 14 PAHs MCV according to ZEK 01.4-08

Parameter	Category I	Category II	Category III
Product	Material in contact with foodstuff, or materials indented to be put in the mouth and toys for children aged<36 months	Materials with foreseeable contact to skin for longer than 30 seconds (long-term skin contact) and toys not covered by category 1	Materials with foreseeable contact to skin up to 30 seconds (short-term skin contact) or without skin contact
BaP	<0.2 mg/kg	1 mg/kg	20 mg/kg
Total of 18 PAHs	<0.2 mg/kg	10 mg/kg	200 mg/kg

The CEN ISO/TS 16190:2013 specifies the test method to quantitatively determine Polycyclic Aromatic Hydrocarbons (PAHs) in Footwear materials. 18 PAHs are considered.

Proposal

Restriction on 18 PAHs was supported within the HS sub-group consultation. Various industry RSLs were screened in order to analysed the threshold value that reflects industry best practices.

The test method ISO 21461 (Nuclear Magnetic resonance) was perceived as too expensive and of limited use (mainly research area). It was therefore proposed to set the limit value in line with ZEK 01.4-08 referred as industry standard method. It is to be discussed if the outer footwear sole could be granted more flexible approach being classified as no skin contact.

Children shoes have high rubber content it was therefore substantiated to introduce a specific requirement for this product type.

It is therefore proposed to set the limit value verified by the test method ZEK 01.4-08.

It is to be discussed if the outer footwear sole could be granted more flexible approach being classified as no skin contact.

Questions

- Should an extended list of of the 16 US EPA PAHs be adopted; in addition the list of 2005/69/EG?
- Should a specific requirements for children footwear be adopted?
- Is the test method test method ZEK 01.4-08 appropriate?

Follow up research and proposals

- The test method ISO 21461 (Nuclear Magnetic resonance) was perceived as too expensive and of limited use (mainly research area). It is therefore proposed to set the limit value in line with ZEK 01.4-08 referred as industry standard method.
- Following the stakeholders feedback, special requirement for products intended for children under 3 years old was introduced in line with ZEK 01.4-08[166]:

[166] http://www.zls-muenchen.de/de/left/aktuell/pdf/zek_01_4_08_pak_verbindlich_engl_30112011.pdf

2.3.6.7 Alkylphenol etoxylate

AHWG1 Technical discussion

APEOs (Alkylphenolethoxylates) belong to the group of non-ionic surfactants used for scouring wool and leather, and also as an emulsifier or dispersing agent in dyestuff formulation. APEOs were voluntarily phased out by TEGEWA (Industrial Association for Textile and Leather Aids, Tanning Materials, and Raw Materials for Detergents) at the end of 2001. This commitment covers all European TEGEWA members, but not necessary manufacturers in other parts of the world; therefore, a ban on APEO is still relevant.

The European Union has regulated the industrial use of nonylphenol ethoxylates and nonylphenol since 2003. The EU's REACH Directive incorporated these regulations in Annex XVII and limits the amount of nonylphenol ethoxylate and nonylphenol as a substances or components in preparations to 0.1% by mass.

Blue Angel restricts the use of alkylphenol etoxylates (APEOs) in footwear, specifically nonylphenols and nonylphenols ethoxylates. A specific test required for assessment and verification is performed by solvent extraction and GC-MS or LC-MS determination, setting the threshold for alkylphenols and alkylphenols ethoxylates as xx mg/kg each. This approach is in line with several RSL brands lists screened.

AHWG1 stakeholder feedback

Stakeholder indicated the existence of ISO test methods applicable to leather under development for the *determination of ethoxylated alkylphenols*: ISO/DIS 18218-1 (Direct method) ISO/DIS and 18218-2 (Indirect method).

Introduction of the specific threshold limit for the APEOs content was supported.

Follow-up research

NPE is still widely used in large concentrations in industrial processes and in products manufactured in countries outside the EU[167], entering the European market cannot therefore be excluded. A number of recently performed test confirmed the possible presence of APEO's [168].
The current EU Ecolabel has no limiting values because there is a general restriction on these substances in the production which mean that we have a zero tolerance.

Best practices identified

By far the most common replacements for NPE are alcohol ethoxylates (AEs)[169] Over the past decade, significant efforts have been made to identify and characterise alternative surfactants to NPE. The US EPA DfE (2011) identified eight potential alternatives to NP. Elmo Leather succeeded to replace NPE as wetting agent with other chemicals within 6 months time[170].

Several Ecolabels type I and RSLs have been screened to verify the relevance of listed auxiliary chemicals to the product group footwear. Reference to Oeko-Tex 100 as well as RSL's that ban their use, including those of Inditex, CADS, Nike, C&A and Bluesign, confirm an individual limit value

[167] COHIBA (2011) COHIBA Guidance Document No. 6: Measures for emissions reduction of nonylphenol (NP) and nonylphenol ethoxylates (NPE) in the Baltic Sea area.
[168]ECHA (2012) Abatement Costs of Certain Hazardous Chemicals Nonylphenol and nonylphenol ethoxylates in textiles – Final Report. June 2012. AMEC Environment & Infrastructure UK Limited
[168] Rydin, S.2012. Risk Management of Chemicals in the Leather Sector: A Case Study from Sweden. The Handbook of Environmental Chemistry, pp 207-224, Springer

of 100 ppm as being appropriate for APEO's and a sum limit value of 50 ppm for alkylphenols. In some cases a specific test required for assessment and verification is performed by solvent extraction and GC-MS or LC-MS determination, e.g. according Blue Angel for Footwear, the content of alkylphenols and alkylphenol ethoxylates shall not exceed 100 mg/kg each. The EU Ecolabel for Textile and for Bed Matrasses refers to threshold of 25 mg/kg sum total.

Proposal

The ISO/DIS 18218-1 (Direct method) and ISO/DIS and 18218-2 (Indirect method) have been released in January 2013.The possibility to refer to these methods should be cross checked.
It is proposed to align the requirement with EU Ecolabel for Textile and Bed Matrasses introducing limit value of 25 mg/kg.

Introduction of the specific threshold limit for the APEOs content was supported during the HS sub-group consultation process. In this case the analytical testing should be performed by solvent extraction and GC-MS or LC-MS determination. According to the information found the detection limit of the analytical method is 10 mg/kg.

It should be stated that consultation with industry revealed the lack of appropriate testing method to which the introduction of the threshold limit should refer. Lowering the threshold value below 100 mg/kg with the use of HPLC testing method might increase the margin of error (possible false positive).

Questions:

- Should specific verification threshold be introduced?
- If yes shall the threshold be in line with EU Ecolabel for Textile and Bed Mattresses (25 mg/kg) or should addressed technical constrains of analytical method mentioned above?

Follow up research and proposals

The testing of the final product for APEOs, to a "limit of 25 mg/kg sum total" was considered as too low to be determined in leather extracts. Stakeholders' feedback assessed that for leather this level was impossible to reach analytically, because of potential presence of co-extracted substances giving background noise. In a reliable way levels of 100 mg/kg were assumed as feasible.

2.3.6.8 Diisocyanate

AHWG1 technical discussion

Polyurethane polymers are formed by reacting at least two isocyanate functional groups with at least two alcohol groups in the presence of a catalyst (tertiary amines, such as dimethylcyclohexylamine, and organometallic salts, such as dibutyltin dilaurate). The first essential component of a polyurethane polymer is the isocyanate. Molecules that contain two isocyanate groups are called diisocyanates. These are also referred to as monomers or monomer units, since they themselves are used to produce polymeric isocyanates that contain three or more isocyanate functional groups. Isocyanates can be classed as aromatic, such as diphenylmethane diisocyanate (MDI) or toluene diisocyanate (TDI); or aliphatic, such as hexamethylene diisocyanate (HDI) or isophorone diisocyanate (IPDI).

For shoe production, the main adhesive type is polyurethane, so release of methylene diphenyl diisocyanate (MDI), toluene diisocyanate (TDI), hexamethylene diisocyanate (HDI) and isophorone diisocyanate (IPDI) must be considered. From these substances, further components such as aliphatic amines, stabilizers, catalysts, etc. may be released or transferred to the final product.

The Nordic Swan air emissions limit for aromatic diisocyanates during polymerisation and spinning is 5 mg/kg produced fibre.

The restriction proposal is done for one substance:

Table 15: Restriction proposal on isocyanates

Substance	Limit	Verification	Source
Methylenediphenyl diisocyanate (MDI)	n.d.	Declaration from applicant supported by test results EN ISO 10283	Annex XVII REACH

Follow-up research

The most frequently used diisocyanates are methylene diphenyl diisocyanate (MDI) and toluene diisocyanate (TDI), with demands of 61.3% and 34.1%, respectively[171].

Methylenediphenyl diisocyanate (CAS: 26447-40-5) is included in the harmonized classification classified according to Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation) as skin sensitizer : (H 315, H317), substance that may cause allergy or asthma symptoms or breathing difficulties if inhaled (H334), is suspected of causing cancer (H351), and is classified as STORE Re 2 (H373).

The most commonly used aromatic diisocyanates are understood to be toluene-2,4-diisocyanate (TDI) and diphenylmethane-4,4'-diisocyanate (MDI). TDI is classified with H317, H330, H334, H351, H373 and H412. MDI is classified with H317, H334, H351 and H373. These combinations of hazard statements suggest that occupational health exposure pathways should be given more emphasis.

Several recent developments have focused on the development of non-isocyanate chemistries especially for polyurethane adhesives, sealants and coatings. Non-isocyanate based polyurethanes (NIPUs) have recently been developed as a new class of polyurethane polymers to mitigate health and environmental concerns[172,173,174175]. Not enough data has been found to estimate the possible market distribution and availability. According to the information provided to JRC-IPTS NIPU is mainly applied in PU coatings area, not the elastomeric technologies applicable to footwear.

Most of the data on human health hazards resulting from diisocyanate exposures are based on occupational populations. Occupational exposure may occur by inhalation of vapours and aerosols or through skin exposure at workplaces where MDI is produced or used. Inhalation can theoretically also occur with dust arising from the handling of pure crystals of MDI. Exposure to diisocyanates can cause contact dermatitis, skin and respiratory tract irritation, immune sensitization, and asthma Animal studies indicate that MDI is a strong allergen. A few human case reports describe allergic contact dermatitis due to MDI exposure[176].

[171] Kreye et al. 2013. Sustainable routes to polyurethane precursors. Green Chemistry. 15, p. 1431

[172]Helou, M et al. 2011. Poly(carbonate-urethane): an isocyanate-free procedure from a,w-di(cyclic carbonate) telechelic poly(trimethylene carbonate)s, Green Chemistry, 13, p. 266

[173]Javni, I et al. 2013. Polyurethanes from Soybean Oil, Aromatic, and Cycloaliphatic Diamines by NonIsocyanate Route, J. Appl. Polym. Sci., p. 566-571.

[174]Delebecq, E. et al. 2013. On the Versatility of Urethane/Urea Bonds: Reversibility, Blocked Isocyanate, and Non-Isocyanate Urethane, Chemical Reviews, 2013, 113, p. 80-118

[175] Figosky, O et al. 2012. Progress in elaboration of nonisocyanate polyurethanes based on cyclic carbonates. International Letters of Chemistry, Physics and Astronomy 3, p.52-66

[176] EU Risk Assessment – Methylenediphenyl diisocyanate, 2009

According to the information provided, the chemical reaction leading to footwear polyurethane formation is complete and the foam is fully cured when demoulded. Various test analysis (wipe test) have demonstrated that there are no traces of aromatic di-isocyanate detectable on the products.

Additionally, the information was found that the reference test method should be carefully selected as there is a high risk of false positive results.

Proposal

Reference to CERTIPur scheme was suggested in terms of TDA and MDA content in the final product (For TDI and MDI based foam), recognised as the key parameter to check the process efficiency. According to CertiPur Label for Flexible Polyurethane Foams requirements TDA and MDA content in TDA and MDA based foams should not exceed **5.0 ppm** for each substance.

Test method set in CERTIPur standard:

Extraction with 1% aqueous acetic acid solution. The sample must be a composite of 6 pieces to be taken from beneath each samples face (to a maximum of 2 cm from the surface). Four repeat extractions of the same foam sample must be performed maintaining the sample weight to volume ratio of 1:5 in each case. The extracts are combined, made up to a known volume, filtered and analysed by HPLC-UV or HPLC-MS. If HPLC-UV is performed and interference is suspected, reanalysis with HPLC-MS should be performed.

Test method found that refers to quantitative analysis of isocyanates content is EN ISO 10283

Questions:
- Is the proposed test method EN ISO 10283 appropriate?
- Are the proposed limit values appropriate?

Follow up research and proposal

The requirement is proposed to be aligned with CERTIPur standard.

2.3.6.9 Water repellents

AHWG1 technical discussion

Very stable, hydrophobic (water-repelling), and oleophobic (oil-repelling) manmade PFCs substances are used in surface coating and as protectant formulations for leather products and textiles that repel water, grease, and soil, and also in fire-fighting foams. PFCs are persistent in the environment, bioconcentrate in wildlife, and are persistent in humans, with most taking years to be cleared from the body. The highest production volume PFCs have been: perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA).

Humans are exposed to PFCs through occupational settings, environmental exposures and/or through contact with consumer goods (diet, air, water, food and household dust) where PFCs have been found. The PFCs environmental and health problems are currently being evaluated by US EPA (2012)[177] and European Food Safety Authority (2008)[178]. The recent study revealed that PFC in the

[177] EPA (2012) Contaminants – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)

children's bodies impaired the effect of childhood vaccines, even at normal concentrations/levels[179]. Experimental evidence exists with regard to reproductive toxicity for the two main PFCs, perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (EFSA, 2008).[180] The use of polyfluorinated compound has been related to hormonal disturbances in addition to presenting a risk for the development of breast cancer.[181]

The European Union (EU) Directive 2006/122/EC of the European Parliament and the Council of 12 December 2006 established restrictions on marketing and use of PFOS for new products in the non-food area which applied from 27 June 2008 onwards. Blue Angel Eco-label for footwear and Nordic Swan Eco-label for textile, hides/skins and leather prohibits the use of PFCs substances in these products.

The Oeko-Tex set limit values for PFOA (0.1 to 1 mg/kg depending on the product category) and for PFOS (1 µg/kg). AFIRM sets the limit for PFOA and PFOS in leather and textiles at 1 µg/kg. The Nordic Swan forbids the use of PFOS in the tanneries.

The restriction proposal is set in

Table 16.

Table 16: Restriction proposal on PFC

Substance	Limit	Verification	Source
Perfluorooctane sulfonate (PFOS)	Greater than C4	Declaration from supplier supported by test report:- GC-MS-MS or HPLC-MS-MS	OECD[182]
Perfluoroalkyl sulfonate (PFAS)	Greater than C6	Declaration from the chemical supplier supported by SDS. / GC-MS-MS or HPLC-MS-MS	OECD[182]

AHWG1 stakeholder feedback

The existence of the norm CEN/TS 15968:2010 "Determination of extractable perfluorooctansulphonate (PFOS) in coated and impregnated solid articles, liquids and firefighting foams" was mentioned.

Some stakeholders supported the exclusion of PFCs and highlighted that alternatives already existed and are still being improved.

The technical need to align the criterion with EU Ecolabel for textile that gives more flexible approach for the use of PFCs in membranes was addressed

[178] European Food Safety Authority.2008. Opinion of the scientific panel on contaminants in the food chain on perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and their salts. EFSA J 2008;653:, p 1-131.

[179] Hildebrandt, S. Reduce PFC exposure and rescue childhood vaccines. 2013. ScienseNordic. April 28, 2013, http://sciencenordic.com/reduce-pfc-exposure-and-rescue-childhood-vaccines (last check August, 2013)

[180] European Food Safety Authority.2008. Opinion of the scientific panel on contaminants in the food chain on perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and their salts. EFSA J 2008;653:, p 1-131.

[181] Bonefeld-Jorgensen, E.C. , Long, M. , Bossi, R, Ayotte, P., Asmund, G., Krüger, T., Ghisari, M., Mulvad, G., , Kern, P., Nzulumiki, P., Dewailly, E. 2011. Perfluorinated compounds are related to breast cancer risk in greenlandic inuit: A case control study. Environmental Health 10:88

[182] http://www.oecd.org/fr/env/ess/gestion-risques/perfluorooctanesulfonatepfosandrelatedchemicalproducts.htm

Follow-up research
As stated in the AHWG1 technical discussion, PFCs may be used when coating of footwear as water repellent.

According to the OECD[182], "developing substitute materials to replace long chain PFCs, or new processes to eliminate their presence as impurities in other products, has been a significant technical challenge. Nevertheless, there has been considerable progress in the development and introduction of substitutes and alternatives. Many substitutes are shorter-chain compounds that still provide the needed functionality, but lack the toxicity and bioaccumulation potential of the long chain PFCs."

The working group discussion during EU Ecolabel criteria revision for textile, thoroughly analysed the current industry state –of – the art, and the availability of possible PFCs alternatives:

1. Fluorinated water, stain and oil repellent treatments shall not be used. These shall include perfluorinated and polyfluorinated treatments. Non-fluorinated treatments shall be readily biodegradable and non-bioacumulative in the aquatic environment including aquatic sediment. Verification: Declaration of no use to be provided by manufacturer responsible for material finishing.
2. Fluopolymer membranes and laminates may be used for outdoor wear and technical outdoor clothing. They should not be manufacturer using PFOS or PFOA or any of its higher homologous as defined by the OECD. Verification: Declaration of compliance from membrane or laminate manufacturer with respect to the polymer production.

Stakeholders refereed to CEN/TS 15968:2010 for determination of extractable perfluorooctanesulphonate (PFOS) in coated and impregnated solid articles, liquids and fire fighting foams - Method for sampling, extraction and analysis by LC-qMS or LC-tandem/MS. Whereas for PFAS GC-MS-MS or HPLC-MS-MS was indicated.

Use of PFCs water repellents to achieve specific product perfomrance
For leather requiring only a water-repellent finish, halogen-free water-repellent agents with a different chemical basis are used depending on the specified finish requirements, e.g. paraffin formulations, polysiloxanes, modified melamine resins or polyurethanes.

According to BREF for combined water-,soil- and oil-repellent finishing of leather, in most cases fluorocarbon resins are still used. A typical aqueous formulation contains 20 – 30 % active polymer compound with 20 – 50 % fluorine in the polymer. ***The use of oleophobing and hydrophobing agents based on fluorocarbon resins is still required for some applications, particularly when anti-soiling and water-repellent properties are required at the same time (BREF, 2013).***

If the specified requirements for the leather include, e.g.:
- very high water repellency, or water pressure resistance
- combined soil, oil, and chemical repellency
- resistance to abrasion
- suitability for lamination,

then **these requirements can only be achieved at this point in time by using fluorocarbon resins.** Alternative fluorine-free products for these fields of application do not exist at present.

Proposal

The basic proposal of PFCs use is to align the criterion with EU Ecolable for Textile. It should however be discussed if a specific derogation should be given for specific technical requirements mentioned e.g. combined soil, oil, and chemical repellency that might be relevant for footwear classified as Personal Protective Equipment, or those that requires specific performance.

The requirement should refer only to specific application (e.g. technical footwear), and not all types of shoes.

Questions

- Does the criterion proposal reflect the best practices in footwear industry?
- Shall the requirement be extended to all type footwear and not only these declared as water resistant?
- Is the industry flexible to achieve both soil and water repellence without PFCs?
- Should the restricted use of PFCs in membranes be referred to the specific applications e.g. athletic footwear, tracking shoes, technical footwear (military boots)?

Follow up research and proposals

PFCs may be used in membranes with incorporated water repellence function and/or applied on the product surface. The required performance level of the Durable Water Repellents (DWR) finish is dependent on the product and its intended uses (e.g. alpine shoes *vs.* town footwear).

All ZDHC members have committed to eliminate long chain PFCs and the associated critical substances of PFOS and PFOA by 2015. The PFC-free alternatives have been checked with regard to performance levels, especially on water, oil, and soil repellence, stain release and durability[183]. In light of the concerns associated with long-chain PFAAs, there is a shift towards DWR chemistries with shorter perfluoroalkyl chains (also termed "C6" or C4" depending on the number of carbons in the perfluoroalkyl chain) being promoted as viable alternatives to long-chain perfluoroalkyl functionality[184].

Product functionality and longevity is one of the key aspects of concern with regards to the requirements set, i.e. PFCs-free materials may potentially be less effective to maintain the item usable. Some brands found PFCs-free alternatives (e.g. PU membranes, dendrimers, silicones, paraffin waxes, urethane coatings). Nevertheless, as to the current state of the art it is unclear whether non-fluorinated membrane materials would perform better than fluorinated membranes in life cycle studies or other accepted scientific environmental assessment methods. As long as no safer alternatives for durable water, oil and stain repellence some brands will continue using short chain PFCs.

The consultation with Outdoor Industry Association (OIA) confirmed that technology used in production of membranes for textile and footwear industry is analogical. It is therefore proposed to harmonize the criterion with EU Ecolabel for textile.

Cross-check with apparel industry confirmed that if functions such as dirt and oil repellence, or suitability for dry cleaning are required, the use of FC treatments is still necessary at the current state of development.

[183] Zero Discharge of hazardous Substances Chemical Programme. Joint Roadmap. Version 2.0. June 2013
[184] Durable Water and Soil repellent chemistry in the textile industry – a research report. ZDHC. 2012

Analysis of the feasibility to apply specific technical requirements for water repellence function in footwear was referred during the technical discussion. This approach could be manageable by including a performance threshold. It was preliminary proposed to require compliance with certain resistance tests at given levels, e.g. AATCC 22 (Spray rating), AATCC 193 / 118 (Teflon Standard Oil and Water Drop), AATCC 130 (Stain Release)[185]. Further consultation with stakeholders pointed out that test should refer to material and not to the entire footwear.

The consultation with technical centres enabled to identify the water repellence performance test method: *the required water penetration of the material shall be lower than 0.2 g and the water absorption shall be lower than 30% according to Standard ISO 20347. Material shall not be manufacturer using PFOA or any of its higher homologous as defined by the OECD*[186].

2.3.6.10 Dyes

AHWG1 technical discussion

The specification for dye restriction will be included in the proposed RSL under current Criterion 1 (see 0) and as indicated in Table 17.

Table 17: Update of restriction proposal on dyes

Applicability	Substances	Limit	Verification	Source
Textile	azo dyes	Proposal: 30 mg/kg for each amine	EN 14362-1:2012 and 3:2012	AFIRM , OkoTex
Leather	azo dyes	Proposal: 30 mg/kg for each amine	CEN ISO/TS 17234	AFIRM, OkoTex
Textile/Leather	Chrome mordant dyes	Shall not be used	Declaration from the chemical supplier supported by SDS.	In line with the on-going revision of the EU Ecolabel for Textile

Around 98 % of leather dyes on the market for drum application are dyes which fix using the ionic interaction between the anionic sulphonate group of the dye and the cationic amine group of the collagen. The maojority of the dyes used by leather industry are water-based acid dyes (which account for about 90% of the market), direct dyes, mordant dyes, pre-metalized dyes, and solubilised sulphur dyes. From the chemical point of view, the dyestuffs are predominantly azo dyes, or anthraquinone dyes. Triphenylmethane dyes may also be used. The addition of dyestuff may range from 0.05 % of the shaved weight of the leathers for pale shades to up to 10 % for deep shades. Pigments may also be added to aid the build-up of a shade, particularly for white leathers.[187] Most of the colorants used in the textile industry are soluble dyestuffs. The clear majority of these are azo dyes (70-80%). Most of the pigments on the market are azo pigments, followed next by phthalocyanines[188].

[185] Durable Water and Soil repellent chemistry in the textile industry – a research report. 2012

[187] BREF for Tanning of Hides and Skins. 2013.

[188] Sedlak.D. 2012. AFIRM Group. Chemical Guidance Document, http://www.afirm-group.com/PDF12/AppendixF-ChemicalGuidance.pdf (last check August 2013)

Azo dyes

The REACH regulation forbids the use of those azo dyes that (by reductive cleavage of one or more azo groups) may release any of 22 aromatic amines specified in Appendix 8 of Annex XVII of the Regulation. The amines 2,4-Xylidine (CAS 95-68-1), and 2,6-Xylidine (CAS 87-62-7) are not listed in the REACH Regulation. Iits restriction stems from harmonization with Nordic Swan criteria for Textile, hides/skins and leather, and on-going revision of the EU Ecolabel for textile.

Metal complex dyes

Metal complex dyes are pre-metalised dyes that show great affinity towards protein fibres. In this dye, one or two dye molecules are coordinated with a metal ion. The dye molecule is typically a monoazo structure containing additional groups such as hydroxyl, carboxyl or amino, which are capable of forming a strong co-ordination complex with transition metal ions such as chromium, cobalt, nickel and copper.[189] These types of dye are used particularly for wool[190], although they are used in many other applications (e.g., leather finishing, coloring of plastics…).

The Nordic Swan only allows the use of metal complex dyes in dyeing of wool, wool mixes (i.e., wool mixed with other fibres such as viscose) and polyamide. Metal emissions to water after cleansing must not exceed 75 mg/kg fibre for Cu, 75 mg/kg fibre for Ni and 50 mg/kg fibre for Cr. Emissions of Cu and Ni shall be analysed in accordance with ISO 8288 and emissions of Cr shall be analysed in accordance with EN 1233 or equivalent methods. The New Zealand Ecolabelling Trust also has a similar requirement.

Mordant dyestuffs

Mordant dyestuffs can be classified as acid dyes, but because of the technology with which they are applied, they are a stand-alone category of dyes. The dyestuff molecules do not contain chromium, however, chromium is present in the salt used to fix the dye onto the fibres. Commonly used salts in this process are: potassium dichromate, potassium chromate and sodium dichromate. The EU Ecolabel for textile (under revision), The Nordic Swan and the New Zealand Ecolabelling Trust restrict the use of chrome mordant dyes.

AHWG1 stakeholder feedback

Some stakeholders have raised the importance of detailing criteria for the pigments used in the plastics. The distinction with dyes must be clear. In particular, these stakeholders wonder whether the legislation on aromatic amines also cover the plastic pigments.

Some stakeholders have suggested to set a stricter limit for azo dyes to 20 mg/kg.

Follow-up research:

Experts were consulted about the specific hazards of pigments. Pigments bleeding from the polymer matrix was perceived as unlikely. A specific test for pigments bleeding was indicated as EN 13517. It was perceived that heavy metal content testing should be sufficient to detect pigments residual content. It should also be stated that the positive results on heavy metal content cannot ensure the origin of the traces comes from pigments.

Pigments currently restricted by REACH and forming part of the SVHC Candidate List are as follows:

[189] http://www.dyes-pigments.com/

[190] http://www.ineris.fr/ippc/sites/default/interactive/bref_text/breftext/anglais/bref/BREF_tex_gb48.html

REACH Annex XIV (Authorised)

- Lead sulfochromate yellow - Pigment Yellow 34 (sunset date: 21 May 2015)
- Lead chromate molybdate sulphate red - Pigment Red 104 (sunset date: 21 May 2015)

REACH Annex XVII (Restricted)

- Pigment Black 25
- Pigment Yellow 157

REACH SVHC Candidate List

- Lead sulfochromate yellow (Pigment Yellow 34)
- Lead chromate molybdate sulphate red (Pigment Red 104)

Proposal

In order not to lead to the confusion between dyes and pigments, it is suggested to refer to the terminology used by REACH regarding the restrictions related to aromatic amines: "azocolourants and azodyes". In addition to this, it is suggested to add to the RSL the hazardous pigments classified by REACH and the SVHC candidate list. All other pigments containing heavy metals are indirectly restricted through the criterion on heavy metals.

Various RSL restricts azo dyes content to 20 mg/kg for textile and 30 mg/kg for leather. The testing method for leather was proposed 17234-1. In order to be consistent with the EU Ecolabel for Textiles, the legal limit of 30 mg/kg is proposed to be maintained for azocoulorants and azodyes.

A new version of the CEN ISO TS 17234-3 has superseded the version CEN ISO TS 17234-2 as reflected in the criterion proposal.

2.3.6.11 Chlorinated paraffins

AHWG1 stakeholder feedback

Stakeholder highlighted the existence of an ISO test method applicable to leather under development for the *determination of chlorinated hydrocarbons in leather - Chromatographic method for short-chain chlorinated paraffins (SCCP)*: ISO/DIS 18219.

It was proposed to analysed the possible restriction of all Chlorinated paraffins (SCCPs, MCCPs, LCCPs).

Follow-up research

Function:
Chloroparaffins can be use as a functional substance in following applications:

- Flame retardants
- Leather greasing agents
- Fat liquor of leather
- Plasticisers

MCCPs are used as secondary plasticizer for PVC and PVC copolymers. They are subdivided into three families according to the length of their carbon chain: short (SCCPs C10-C13), medium (MCCPs C14-C17) and long (LCCPs >C18) chain chlorinated paraffins.

Other possible application: in the tanning process for assisting removal of fat from raw hide, and after tanning to assist re-fatting of the leather, adhesives, lubricants and flame retardants for plastics and fabrics.

Summary evaluation of evidence
MCCPs (CAS No: 85535-85-90) cover mixtures of alkanes with 14 to 17 carbon atoms and different degrees of chlorination. Norwegian PoHS (Prohibition on Certain Hazardous Substances in Consumer Products) that became effective in 2008 restricts the content of MCCP in consumer goods (including clothing) to 0.1% w/w in article. Medium Chained Chlorinated Paraffins (MCCP's) Alkanes C14-17 are declared by a number of RSL's. Classifications may include H362 and H410. They are understood to be used in combination with DEHP. Their continued requirement as an extender in combination with substitute plasticisers is to be verified/ check.

The available empirical and modelled data indicate that SCCPs (Alkanes, C10-13, chloro), are persistent, bioaccumulative and toxic, particularly to aquatic organisms, and they may undergo long-range environmental transport. SCCPs are considered as Persistent Organic Pollutants (POPs) pursuant to decisions taken under the UNECE Aarhus (POPs) Protocol to the Convention on Long Range Transboundary Air Pollution (LRTAP). The Stockholm Convention nomination for listing is directed at SCCP products that contain more than 48% by weight chloride. Use of SCCP is restricted by the REACH Regulation meaning that they shall not be placed on the market for use as substances *or as constituents of other substances or preparations in concentrations higher than 1 % in metalworking and for fat liquoring of leather.*

Introduction of specific limits for the MCCPs content was supported during sub-group consulation. It was suggested to check if the general restriction on the use of Chlorinated Paraffins (SCCPs, MCCPs, LCCPs) is technologically feasible.

Medium-chain chlorinated paraffins are used as plastics additives, such as PVC, to increase flexibility - and to rubbers to reduce flammability. MCCPs are used for leather fatiquoring, and are also ingredients of paints, sealing agents and coatings for textiles and leather. are used in fat liquors for leather. During leather fatiquoring, typically, medium-chain chlorinated paraffins with a relatively low chlorine content (e.g. 40% wt. Cl) are used. The formulation of leather fat liquors consists in substances mixing using an enclosed system at ambient temperature. The main components of the fat liquor are water, natural fats (e.g. fish oils), surfactants and the chlorinated paraffin. The chlorinated paraffin accounts for about 10% (range 5-15%) by weight of the formulated fat liquor.

According to the recent finding of BREF for Tanning of Hides and Skins, and information provided, middle-chain chlorinated alkanes in fatliquors can be replaced e.g. by fatliquoring polymers based on methacrylates; or by silicone oils or modified silicone oils**. For special applications, no substitute has yet been found for long-chain chlorinated alkanes. The practical application of the use of alternative technologies should be crossed check with stakeholders.**

Medium-chain chlorinated paraffins (MCCPs) (CAS 85535-85-9; Alkanes, C14-17) are currently under investigation as potential persistent bioaccumulative toxic (PBT) compounds. The key problem is the general dispersion of MCCPs into the environment from a great variety of products throughout their entire lifecycle, through usage and as waste. This particularly applies to rubber and plastic products, including PVC where the discharge can be significant. In order to limit the risk, we believe it is necessary to regulate consumer products that contain more than 0.1% weight MCCPs in the homogenous individual parts of products.

The alternatives to MCCPs exist for the majority of applications. In fact, LCCPs have been proposed among safer alternatives to MCCPs [191:192]. There is no existing, specific regulation for the use of MCCPs in consumer products nationally or within the EU.

Proposal

The verification limit for MCCPs (C14-C17) was found in several RSLs at the level 1000 mg/kg. The additional cross-check with industry stakeholders confirms the feasibility of MCCPs restriction.

The identified test method ISO 18219 was perceived as suitable only for leather substrate, the feasibility of application to other materials should be validated accordingly.

Questions:

- Existence of the test method that could refer to other than leather materials should be verified as SCCP are understood to be used in plastic material in combination with DEHP.
- Is the proposed test method accurate: EN ISO DIS 18219
- Which is the level of flexibility of footwear industry to introduce the restriction on MCCP's?

Follow up research and proposals

Norwegian PoHS (Prohibition on Certain Hazardous Substances in Consumer Products) that became effective in 2008 restricts the content of MCCP in consumer goods (including clothing) to **0.1% w/w** in article The restriction refers to plascisers, additive in flexible PVC and rubber especially for conveyor belts, in paints, leather, coatings, textile and sealing compunds.

For articles, the main use of MCCPs within the EU is as secondary plasticiser in PVC and as flame retardant in rubbers and other polymers. The major use of MCCPs in articles is as co-plasticiser used together with phthalates in PVC. MCCPs are used in high-end leather products to provide light-fastness, strong binding to the leather and a dry surface feel. A load of 10-15 parts per hard resin of MCCPs corresponds approximately to a concentration in the final PVC plastics of 6-10 %.[193] According to the information found the demand for MCCPs for PVC is generally declining in EU. The decrease in the use of MCCPs may likely be a consequence of the gradual substitution of DEHP by DINP and other heavier phthalate plasticisers. This indicates that MCCPs in flexible PVC articles may perhaps be more prevalent in articles produced outside the EU.

Following the stakeholders' comments, and considering the market situation, it is proposed to align the threshold with Norwegian PoHS restriction to 0.1% w/w.

[191] http://www.eftasurv.int/media/notification-of-dtr/2010-9018-en.pdf
[192] Environmental risk reduction strategy and analysis of advantages and drawbacks for medium chain chlorinated paraffins (MCCPs: (Updated report, November 2008 – Entec report commissioned by the UK Department for Environment, Food and Rural Affairs (Defra), Annex XV Restriction Report Submitted by the United Kingdom, 30 November 2008 and RRS for MCCPs (February 2008) from Defra, United Kingdom
[193] http://www.miljodirektoratet.no/old/klif/publikasjoner/2735/ta2735.pdf

2.3.6.12 Phthalates

AHWG1 stakeholder feedback

Some stakeholders have suggested deleting the exclusion of DNOP (di-n-octyl phthalate), DINP (di-isononyl phthalate), DIDP (di-isodecyl phthalate) because they are not hazardous or because they are not actually used.

On the other hand, it has been suggest to ban those phthalates for all types of footwear (not only children footwear).

Follow-up research

The phthalates DINP, DIDP and DNOP are restricted in toys and childcare articles which can be placed in the mouth by children in accordance with entry 52 of Annex XVII to the REACH Regulation. It is therefore proposed to set the restriction on these phthalates for children products. Also the phthalates DEHP, DBP and BBP are restricted in toys and childcare articles in accordance with entry 51 of Annex XVII to REACH (but without the condition "which can be placed in the mouth by children").

The proposed restriction limit look for the alignment with EU Ecolabel criteria for Bed Mattresses. It should be stated that within the consultation process industry notified yet introduced stricter restriction at the level of 500ppm (0,05%) for DEHP, BBP, DBP and DIBP. considering that 2020 is phase out date. In Denmark, all phthalates have been banned in toys and childcare articles for children aged 0-3 years in concentrations higher than 0.05%. Similar approach might be observed on the list of restricted substances prepared by Deutsches Schuhinstitut.

Alternative plasticisers have been identified to replace restricted phthalates in most cases, especially children products. Several of the alternatives assessed by Danish EPA study (2010) can be used in many areas of application, whereas others are more specialised. There is also existent evidence on the substitution of DINP, DIDP and DNOP in toys and childcare articles which can be placed in the mouth by children DINP and DIDP have become dominating alternatives to DEHP due to their closeness in performance to DEHP and only moderately higher costs. DINP or DIDP can replace DEHP for practically all applications and the price is approximately 10% higher than the price of the DEHP. Alternative non-phthalate plasticisers that can replace DEHP, most importantly the plasticisers DINA, DINCH, DEHT, ATBC and ASE, have been placed on the market at prices that range from being slightly higher to being significantly higher than the price of DEHP[194][195]. In addition, low-molecular-weight polymeric ester plasticizers that are derived from polymeric multifunctional alcohols and adipic, sebacic or glutaric acid; polymeric rubbers and plastics; and reactive plasticizers may also be potential substitutes for phthalates.

DnHP was added to the restricted phthalates list, as being inserted into Candidate List on 10/12/1013. Dihexyl phthalate (CAS Number: 84-75-3 is listed in Annex III of Regulation (EU) No 944/2013 amending, for the purposes of its adaptation to technical and scientific progress Annex VI to Regulation (EC) No 1272/2008 (CLP) of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures. DnHP is classified as toxic for reproduction, Repr. 1B (H360FD: "May damage fertility. May damage the unborn child."). This classification shows that it meets the criteria for classification as toxic for reproduction in accordance with Article 57 (c) of REACH.

In addition, a test method has been identified for the determination of phthalates in footwear materials: ISO/TS 16181:2011 - Footwear -- Critical substances potentially present in footwear and

[194] Identification and assessment of alternatives to selected phthalates. Danish EPA. 2010

[195] U.S. Environmental Protection Agency. Revised 03/14/2012. Phthalates Action Plan1

footwear components -- Determination of phthalates in footwear materials. Proposed test method ISO/TS 16181 was perceived as accurate.

Proposal

The possible phthalates content restriction of 0.05% w/w in children footwear should be further discussed. Preliminary cross check with industry show the acceptance to introduce of the more ambitious threshold value of 0.05% w/w for children products.

The testing method ISO/TS 16181:2011 was indicated as accurate.

Questions

- Is it feasible to introduce more ambitious threshold level for phthalates content for children footwear?
- Could a general restriction list be adopted or should specific plasticiser options be identified as stated in the proposal?
- Are all listed phthalates relevant to the product group?
- Are then other phthalates that should be specifically listed?

2.3.6.13 Vinyl chloride monomer

AHWG1 stakeholder feedback

The introduction of specific limit value for the vinyl monomer content in PVC was suggested.

Follow-up research

Vinyl chloride monomer is classified in REACH as carcinogenic: category 1A (H350). However, there is no legal restriction for the vinyl chloride and no scientific evidence has highlighted its relevance for the footwear product group.

In Germany there is a mandatory limit value for vinyl chloride monomer of 1 ppm in consumer goods (German Consumer Goods Ordinance (Bedarfsgegenständeverordnung)).

Animal studies also suggest that infants and young children might be more susceptible than adults to vinyl chloride-induced cancer. Vinyl chloride can leach from plastic PVC bottles or containers used to contain foods or beverages, but government agencies such as the Food and Drug Administration (FDA) have restricted the amount of vinyl chloride that can be present in these package[196].

The Council Directive 78/142/EEC of 30 January 1978 concerns the presence of vinyl chloride monomer, and possible migration from, materials and articles prepared with vinyl chloride polymers or copolymers, which in their finished state are intended to come into contact with foodstuffs, or which are in contact with foodstuffs and are intended for that purpose. According to Annex I materials and articles must not contain vinyl chloride monomer in a quantity exceeding 1mg/kg.

American Apparel and Footwear Association (AAFA) set the limit value of 1 mg/kg on the vinyl monomer content in the final product. The recommended analytical method foud is ISO ISO 6041 in line with the specification of Commission Directive 80/766/EEC. The Bluesign specifies the limit of vinyl monomer content as 0.1 mg/kg.

[196] http://www.atsdr.cdc.gov/ToxProfiles/tp20-c1-b.pdf

Proposal

It is suggested to gather more feedback from stakeholders before concluding on this substance.

Questions

- Is the restriction on vinyl monomer content in PVC material substantiated?

2.3.6.14 Heavy metals

AHWG1 stakeholder feedback

It has been highlighted that the method EN ISO 17072 should be used for the detection of heavy metals in leather.

The introduction of restriction on the total chromium content in line with Blue Angel requirement 200 mg/kg was supported meeting preliminary support from the HS sub-group.

Split opinion has been submitted on the division of requirements for children and other products. Generally the alignment with EU Ecolabel for textile was supported.

Follow-up research

Chromium (VI) and total Chromium

A Commission Regulation (draft under development[197]) will amend REACH Annex XVII of (EC) No 1907/2006 regarding chromium VI compounds in leather articles and articles containing leather parts. The proposed date of application is expected in the first quarter of 2015. The draft regulation prohibits any leather articles or articles containing leather parts that come into contact with skin which contain 3 or more mg/kg (0.0003%) of chromium VI from being placed on the market. It does not apply to second-hand articles which were in end-use before the first day of the 13th month after the date of the entry into force. The proposed restriction focuses on the risk of skin sensitisation related to direct or indirect skin contact under normal or reasonably foreseeable conditions.

The International ISO Standard ISO 17075 is a commonly accepted and economically competitive method that determines the Cr(VI) content in all types of leather in concentration of 3 mg/kg (3 ppm) or higher. It should be stated that patients with Cr(VI) allergy may react to a single occluded exposure to 1 ppm - 3 ppm Cr(VI). Therefore, non-quantifiable level of Cr(VI), i.e. below 3 ppm, does not indicate that there is no risk of Cr(VI) allergy.

During the consultation process the need to add the requirement on extractable total chromium content in the chromium tanned leather part of has been suggested. Combination of this requirement with the threshold for Chromium (VI) could also be an indication of accuracy of tanning method. In fact Blue Angel and Japanese Eco Mark for Shoes have set a limit value of 200 mg/kg in the chromium tanned leather. The value set is an output of industry consultation process run during the Blue Angel criteria development for footwear. Japanese Eco Mark requires ISO17072-1 test method for chromium total testing.

Table 18 Chromium requirement in analysed Ecolabels type I

Label	Restriction mg/kg
Japan Eco Mark	Cr (VI) n.d. Total chromium: <50* <200

[197] http://www.parlament.gv.at/PAKT/EU/XXV/EU/01/54/EU_15432/imfname_10445799.pdf

Blue Angel	Cr (VI) n.d. Cr_{total} 200 for Cr tanned leather Cr_{total} 2 for textile

n.d. under detection, detection limit 3 ppm according to ISO 17075
*Article for children under 36 months

Other metals

The indication of the most appropriate testing methods for verification of heavy metals content should further be discussed. The comparison of different Restricted Substance Lists does not clearly indicate the most appropriate standard for heavy metal content in footwear. It should also be discussed if a different test method for footwear designated for children under 36 months should be used, based on the precautionary principle considering possible oral contact:

- EN 14602 establish the acid digestion testing method for heavy metals for footwear in line with EN ISO 17072-2 (Metod B).
- EN ISO 17072-1 is often indicated in different RSLs.
- DIN ISO 105-E04 is recommended by some RSLs (extraction method with acid sweat solution).

The table 5 reflects heavy metals proposed to be specifically tested in footwear on the base of different Ecolabels type I representing the best practices example.

Table 19 Restrictions of heavy metals content in analysed Eco-labels

Label/	**Test method**	**Restriction (mg/kg)**							
		Hg	Cd	Pb	Sb	Ni	Co	Cu	As
Nordic Swan	CEN TC 309 WI 065 - 4.3.		n.d.	n.d.		n.d.			
The New Zealand Ecolabelling Trust	CEN TC 309 WI 065 - 4.3.		n.d.	n.d.					n.d.
Japan Eco Mark	ISO 17072-1	0.02	0.1	0.2* 0.8		1* 4	1* 4		
Blue Angel	ISO 17072-1 (Leather) DIN 54233-2:2010-02 (Textile)	0.02	0.1	0.8	5.0	4.0	4.0	50.0	0.2
EU Ecolabel for Textile	DIN ISO 105-E04	0.02* 0.02	0.1* 0.1	0.2* 1.0	30.0* 30.0	1.0* 1.0	1.0* 4.0**/1.0	25* 50.0	0.2* 1.0

*For children under 36 months

Proposal

For extractable heavy metals, it is proposed to use the following test methods: EN ISO 17072 for leather, EN 1122 for plastics (cadmium and lead), and EN ISO 105-E04 ICP-MS for textiles.

For Nickel, it is proposed to align to the EU Ecolabel for textiles and to add a limit on the migration of nickel at 0. 5 µg/cm2/week. The test method EN 1811 shall be used.

For chromium VI, it is proposed to use the following test methods: EN ISO 17075 for leather (detection limit 3 ppm).

According to technical expert opinion EN ISO 17072–1 should be used for extractable Cr from leather. Please do not use EN ISO 17075, it is only for Cr(VI) in leather.For chromium total, it is proposed to use the following test methods: EN ISO 17072-1 for leather.

Furthermore it was specified that the sampling method significantly influences the results. The EN ISO 4044 was indicated as the sampling preparation method of reference, with indication that the samples should be completely grounded.

In general, it is suggested to set the detection limit values.

By way of comparison that reflects industry best practices, it is proposed to align metal content requirement with EU Ecolabel for Textile criteria. It is proposed to introduce the division between children and adults footwear.

Questions

- Is the introduction of restriction on total Cr content in chromium tanned leather substantiated?
- Should the division between children and adults footwear be considered?

Follow up research and proposal

- Clarification of the wording: change from total to extractable chromium content.
- Chromium testing in the product, the scope is proposed to be restricted to chromium tanned leather.
- Testing method proposed in assessment and verification was clarified according to stakeholder feedback: Extraction - EN ISO 105-E04-2013 (Acid sweat solution). Detection: EN ISO 17072-1 for leather, ICP-MS, ICP-OES (for textile and plastic).
- It was proposed within the sub-group consultation that the test of metal contents in the product should be conducted annually in order to demonstrate ongoing compliance with the criterion.

2.3.6.15 Formaldehyde

AHWG1 technical discussion

Specific focus on formaldehyde content in leather stems from the Commission Statement that supported the last product group revision 2009 (19 March 2009/ ENV G2).

Formaldehyde is a toxic, pungent, water-soluble gas used in the aqueous form as a disinfectant, fixative, anti-shrinking agent, and tissue preservative, making it versatile for a wide range of uses. Formaldehyde resins are used in wood products (e.g., particleboard, paper towels), plastics, paints, manmade fibres (e.g., carpets, polyester), cosmetics, and other consumer products[198]. Formaldehyde can be used in the tanning, re-tanning and finishing leather.

[198] International Agency for Research on Cancer. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Vol. 88. 2006, Formaldehyde. Available: http://monographs.iarc.fr/ENG/Monographs/vol88/volume88.pdf.

BLC Leather Technology centre guidelines state that leather should not contain more than 200 mg/kg of formaldehyde for articles in general use. If the item is in direct skin contact, this limit should be 75mg/kg, and 20mg/kg for items used by babies (<36 months). Lowering the current threshold from 150 ppm to 75 ppm has been discussed mainly with one stakeholder whose company established the thresholds of 75 ppm if there is a direct skin contact and 150 ppm if there is no skin contact. However, the stakeholders stated that the limit of 75 ppm for all products would be achievable, as recommended by different schemes (e.g., Blue Angel). Japanese Law 112 restricts formaldehyde content to 20 ppm for children products (<24 months). The AFIRM RSL specifies the threshold for formaldehyde content in leather as 20 ppm for babies and 50 for adults, if there is direct skin contact.

Therefore, the proposal is to revise the threshold for free and hydrolysed formaldehyde in footwear components as follows:

- textile:,not detectable (detection limit: 20 ppm);
- leather: 75 ppm if there is a direct skin contact and not detectable (detection limit: 20 ppm) for products for children under 36 months, 150 ppm for other applications

Simultaneously, the requirement will be included in the black list of substances (RSL).

AHWG1 stakeholder feedback
In general, stakeholders were in favour of proposed limits values. Lowering the formaldehyde threshold was not considered necessary by one stakeholder, as its content in the product changes over time.

Proposal
As most stakeholders supported the revised criterion proposal, it is suggested to set requirement as proposed for the 1st AHWG Meeting.

Follow up research and proposal:

Within the consultation process test method EN ISO 17226-1[199] was perceived as the most appropriate for testing of coloured leather. The method EN ISO 17226-2 is a colormetric method not suitable for testing coloured leathers.

2.3.6.16 N-Nitrrosamines

Applicability: Elastomers (synthetic and natural rubber)

Function:
Nitrosamines are degradation products formed from nitrates reaction with a secondary or tertiary amine. N-nitrosamines and precursors that are present in rubber products originate from certain accelerators and chemical stabilizers (carbamates and thiuramens) used for the vulcanization of rubber, such as: tetramethylthiuram disulphide (TMTD), zinc diethyldithiocarbamate (ZDEC) and morpholinomercaptobenzothiazole (MBS). The formation occurs during manufacture of most rubber products but also latex products.

Summary of evidence found
N-nitrosamines are converted by oxidative enzyme systems into substances that cause DNA mutations, which are thought to initiate carcinogenesis, they are mostly systemically acting genotoxic carcinogens. Research shows that many nitrosamines found in the work environment,

[199] Leather -- Chemical determination of formaldehyde content -- Part 1: Method using high performance liquid chromatography

including NDMA, are carcinogenic in animals. The routes of potential human exposure are ingestion, inhalation, and dermal contact.[200,201] Publicly available information from the rubber industry indicates that nitrosamine formation can be avoided if the accelerators are replaced by others which do not contain nitrosatable substances[202].

15 N-Nitrosamine reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals following Report on Carcinogens 2011 are:

- N-Methyl-N'-Nitro-N-Nitrosoguanidine
- N-Nitrosodi-n-butylamine
- N-Nitrosodiethanolamine
- N-Nitrosodiethylamine
- N-Nitrosodimethylamine
- N-Nitrosodi-n-propylamine
- N-Nitroso-N-ethylurea
- 4-(N-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone
- N-Nitroso-N-methylurea
- N-Nitrosomethylvinylamine
- N-Nitrosomorpholine
- N-Nitrosonornicotine
- N-Nitrosopiperidine
- N-Nitrosopyrrolidine
- N-Nitrososarcosine

Nitrosamines and nitrosable substances are regulated in the Safety of Toys Directive (2009/48/EC, part III, point 8) for articles intended to be used by children under the age of three and in other toys intended to be placed in the mouth:

(…) nitrosamines and nitrosable substances shall be prohibited for use in toys intended for use by children under 36 months or in other toys intended to be placed in the mouth if the migration of the substances is equal to or higher than 0,05 mg/kg for nitrosamines and 1 mg/kg for nitrosable substances, calculated as sum of all detected N-nitrosamines after nitrosation according to EN 71-12:2013.

During the consultation process the test method EN 71-12:2013 as being made for toys was not perceived as the most appropriate appropriate, test method EN 12868 was proposed instead, (EN 12868: Child use and care articles - Methods for determining the release of N-Nitrosamines and N-Nitrosatable substances from elastomer or rubber teats and soothers).

N-Nitrosamines and N-Nitrosatable substances are extracted into a nitrite-containing artificial saliva salt solution. After concentration and, in the case of N-Nitrosatable substances, after conversion, the final test solutions are examined for N-Nitrosamines by gas chromatography (GC) employing a chemiluminescence detector or other suitable validated analytical technique. The analysis shall be carried out in an atmosphere free from volatile NNitrosamines and N-Nitrosatable

[200] Institut national de santé publique du Québec. 2011. Cancer risk assessment for workers exposed to nitrosamines in a warehouse of finished rubber products in the Eastern Townships. Gouvernement du Québec

[201] Straif et al.2000. Exposure to high concentrations of nitrosaminesand cancer mortality among a cohort of rubber workers. Occup Environ Med. 57(3):pp 180–187

[202] European Commission. Scientific Committee on Consumer Products. 2007. Opinion on the Presence and Release of Nitrosamines and Nitrosatable Compounds from Rubber Balloons. SCCP/1132/07

substances. The N-Nitrosamine and N-Nitrosatable substances released are expressed as N-Nitrosamines released in micrograms per kilogram (µg/kg) of the sample.

Proposal:
The current list of specifically restricted N-Nitrosamine has been updated as specified in the Restricted Substance List.

Follow up research and proposals:

N-nitrosodibenzylamine (NDBzA)

Following the information provided by stakeholders it is proposed to remove N-nitrosodibenzylamine (NDBzA) (CAS:5336-53-8) from the restricted N-nitrosamines list on the base of following rationales:

- The 'Report on Carcinogens 2011. 12th Ed. does not mention N-nitrosodibenzylamine (NDBzA) as genotoxic /carcinogenic[203]
- TRGS 552[204] listed N-nitrosodibenzylamine (NDBzA) as an amine for which no carcinogennity effect was found.

Test method

Test method EN 71-12:2013 as being made for toys was not perceived as the most appropriate.

The proposed test method is: EN 12868[205] or EN 14602[206]: N-Nitrosamines and N-Nitrosatable substances are extracted into a nitrite-containing artificial saliva salt solution. After concentration and, in the case of N-Nitrosatable substances, after conversion, the final test solutions are examined for N-Nitrosamines by gas chromatography (GC) employing a chemiluminescence detector or other suitable validated analytical technique. The analysis shall be carried out in an atmosphere free from volatile NNitrosamines and N-Nitrosatable substances. The N-Nitrosamine and N-Nitrosatable substances released are expressed as N- as N-Nitrosamines released in micrograms per kilogram (µg/kg) of the sample.

Detection limit after applying the analytical correciton:
N-Nitrosatables substances detected is less than 0,1 mg/kg
N-Nitrosamines substances detected is less than 0,01 mg/kg

2.3.6.17 Colophony

Applicability: resin
Function: Ingredient in adhesives
Colophony or Greek pitch (Pix græca), is a solid form of resin obtained from pines and some other plants, mostly conifers, produced by heating fresh liquid resin to vaporize the volatile liquid terpene components.

Summary of evidence found
Colophony or rosin (CAS: 73138-82-6) has an EU harmonised classification as skin sensitizing according to Annex VI of the CLP regulation (Regulation (EC) No 1272/2008). This means that the

[203] Report on Carcinogens. 2011. Twelfth Edition. http://ntp.niehs.nih.gov/go/roc12
[204] Technische Regeln fur Gefahrstoffe. N-Nitrosamine. 2007. German Ministry of Labour "Bundesministerium für Arbeit und Soziales" (BMAS))
[205]Child use and care articles - Methods for determining the release of N-Nitrosamines and N-Nitrosatable substances from elastomer or rubber teats and soothers
[206]Footwear. Test methods for the assessment of ecological criteria

hazard statement H317 « May cause an allergic skin reaction » or the risk phrase R43 "May cause sensitisation by skin contact" shall apply for products containing rosin in a concentration of at least 1%. Exposure to colophony fumes can cause occupational asthma[207].

Considering the risk of possible reaction to colophony it is proposed to specifically restrict the use of the substance.

2.3.6.18 Auxiliaries

Function
DSDMAC, DTDMAC, DHTDMAC might be used within footwear supply chain as substances with the following function:

- Leveling agents for basic cationic dyes (acrylic fibre)
- Fixaction of direct dyes (cotton, viscose, polyamide)
- Surfactants
- Emulsifiers
- Water repellent agents

Nitrilotriacetic acid (NTA) is used as a chelating agent

Summary evaluation of evidence

The cationic detergents distearyl-dimethyl ammonium chloride (DSDMAC), di(tallow)dimethyl ammonium chloride (DTDMAC) and di(hardened tallow) dimethyl ammonium chloride (DHTDMAC) are substances with toxic and persistent properties. Their discharges to water have been reduced considerably in the past. The remaining concern is their use in fabric and leather softeners through which they reach surface waters via direct discharges, sewer systems or sewage treatment plants.

These three surfactants have been phased out in many countries according to the PARCOM Recommendation 93/4 on the Phasing Out of Cationic Detergents DTDMAC, DSDMAC and DHTDMAC in Fabric Softeners.

Proposed criteria takes into account the EU Ecolabel criteria for textiles and elements of relevance from several branch RSLs.

At earlier revisions a ban against NTA was discussed. Evidence suggests that the strong complexing capacity of NTA can result in adverse effects upon heavy metal removal during sewage treatment and upon mobilisation of metals from sediments in receiving waters. Moreover, NTA is notified with hazard statements H351.
The toxicity of NTA towards algae, crustaceans and fish is low with EC/LC_{50} values well above 100 mg/l. The acute toxicity of NTA and its salts in animals is also relatively low. However,
the International Agency for Research on Cancer (IARC) has evaluated that there is sufficient evidence for the carcinogenicity of NTA and its sodium salts in experimental animals, and the overall evaluation is that nitriloacetic acid and its salt are possibly carcinogenic to humans. IARC has placed NTA in Group 2B[208]

Following the findings of technical analysis conducted within EU Ecolabel criteria development of several product groups it is proposed to introduce synergic requirement for EU Ecolabel for Footwear.

[207]Karlberg, A-T. 2012. Colophony: Rosin in Unmodified and Modified Form. Kanerva's Occupational Dermatology. p 467-479
[208] The water footprint of cotton consumption. 2005. Value of Water Research Report Series No. 18.

2.3.6.19 Dimethylformamide

Applicability: polyurethane, polyurethane coatings, acrylic fibers.

Function
N,N-Dimethylformamide (CA: 68-12-2) is a polar (hydrophilic) organic solvent with the formula (CH3)2NC(O)H commonly abbreviated as DMF (or DMFA). DMF is used in the production of acrylic fibers and plastics. It is also in the manufacture of adhesives, synthetic leathers, fibers, films, and polymer coatings.

Summary evaluation of evidence
DMF is thought to cause birth defects. In 1989, IARC initially evaluated the carcinogenicity of N,N-dimethylformamide as Group 2B ("there is limited evidence of carcinogenicity in humans andless than sufficient evidence of carcinogenicity in experimental animals"). In 1999, however, IARC concluded that there is inadequate evidence in humans for the carcinogenicity of N,N-dimethylformamide. The human data analysis are insufficient for the evaluation of the carcinogenic effects . In some sectors of industry, women are banned from working with DMF. For many reactions, it can be replaced with dimethyl sulfoxide.

DMF is harmonously classified as CMR category, Repr 1B. (H360D) according to Annex VI of Regulation (EC) No 1272/2008. The proposal to restrict the use of DMF is in line with Blue Angel criteria for footwear, and general approach observed in the industry RSLs.
DMFA was found in gloves both in the PU coating and also, in higher concentrations, in the uncoated liner and in the cuff. Migration tests determined DMFA release under usage conditions. TRGS[209] 401 presently sets an occupational exposure limit (OEL) of 10 mg/kg DMFA for polyurethane coated glove material[210].

The test method found is methanol extraction and GC-MS determination.

Following the findings of technical analysis conducted within EU Ecolabel criteria development for Bed Matrasses it is proposed to introduce synergic requirement for EU Ecolabel for Footwear.

[209] Technische Regel für Gefahrstoffe 401. Gefährdung durch Hautkontakt Ermittlung – Beurteilung – Maßnahmen.
[210] Zuther, F. 2011. Tests on N,N Dimethylformamide (DMFA)1 in PU-coated knitted gloves
DMFA – Yes, no or still safe anyway? Sicherheitsingenieur 10/2011

2.3.7 CRITERION 8: Parameters contributing to durability

The technical requirements and proposed performance parameters were revised. The values for shoe insoles abrasion were added on the base of EN 17704 and additional information provided by footwear industry.

Present criterion, Decision 2009/563/EC
Occupational and safety footwear shall carry the EC mark (in accordance with Council Directive 89/686/EEC). All other footwear shall meet the requirements indicated in the table overleaf. Assessment and verification: the applicant shall provide a test report corresponding to the parameters indicated in the table overleaf, using the following test methods: — EN 13512 — Upper — Flex resistance, — EN 13571 — Upper — Tear strength, — EN 17707 — Outsoles — Flex resistance, — EN 12770 — Outsoles — Abrasion resistance, — EN 17708 — Whole sole — Sole adhesion, — EN 12771 — Outsoles — Tear strength, — EN ISO 17700 — Test methods for uppers, linings and in socks — Colour fastness to rubbing.
Suggested criterion (2nd AHWG, May 2013)
Occupational and safety footwear shall carry the EC mark (in accordance with Council Directive 89/686/EEC). All other footwear shall meet the requirements indicated in the table overleaf. Assessment and verification: the applicant shall provide a test report corresponding to the parameters indicated in the table overleaf, using the following test methods: — EN 13512 — Upper — Flex resistance, — EN 13571 — Upper — Tear strength, — EN 17707 — Outsoles — Flex resistance, — EN 12770 — Outsoles — Abrasion resistance, — EN 17708 — Whole sole — Sole adhesion, — EN 12771 — Outsoles — Tear strength, — EN ISO 17700 — Test methods for uppers, linings and in socks — Colour fastness to rubbing. — EN 17704 —Insoles - abrasion resistance
Suggested criterion, November 2014
Occupational and safety footwear shall carry the EC mark, in accordance with Council Directive 89/686/EEC. All other footwear shall meet the requirements indicated in Table 4. *Assessment and verification: the applicant shall declare the compliance with the criterion supported by test reports that prove the compliance to the limits of Table 4.*

AHWG1 technical discussion

Assurance of appropriate fitness for use quality of a product increases the time of its usage and reduces the quantity of items required to fulfil the functional unit. Different parameters influence the actual durability of one generic pair of shoes, however, only physic-chemical parameters may be controlled by the manufacturers; these are evaluated through corresponding standarized tests. Beyond product quality, the durability of shoes is also subjected to consumer behaviour and fashion trends. Because of high uncertainty level, and lack of possible statistical estimation on

social aspects that potentially influence footwear lifetime, only product physical characteristic could be addressed.

The potential improvement is related to the use of appropriate materials and assembling processes that extend footwear lifetime in appropriate conditions.

The baseline scenario assumed that two pairs of footwear are required to fulfil the functional unit; that is to say, a consumer needs two pairs of footwear during one year. In other words, one pair of footwear can be worn 6 months[211] before being discarded. Based on this assumption, usage of the same pair of footwear for 12 months (6 months longer than the base case scenario) would yield an improvement potential of 50 % on all impact categories (in other words, the environmental impacts would be reduced by half).

The proposal is to follow the current EU Ecolabel approach: a minimum limit value for each selected ISO test method should be reached. According to stakeholders' opinion expressed on the questionnaire, selected fitness for use methods should be reviewed or clarified. Table 20 presents test methods that are required by different schemes in order to assess or ensure a sufficient durability of footwear. The Blue Angel uses the same tests as the current EU Ecolabel. The ADEME-AFNOR use some other tests. The relevance of including these tests in the criterion could be discussed further with stakeholders, together with analysis of possible tests redundancy.

Table 20: Test methods required by other schemes related to the footwear product group

Test method	ISO norm	Current EU Ecolabel	Blue Angel	ADEME-AFNOR
Upper – Flex resistance	ISO 13512	X	X	
Upper – Tear strength	ISO 13571	X	X	
Outsoles – Flex resistance	ISO 17707	X	X	X
Outsoles – Abrasion resistance	ISO 12770	X	X	
Outsoles – Tear strength	ISO 12771	X	X	
Whole sole – Sole adhesion	ISO 17708	X	X	X
Uppers, linings and insocks – Tear strength	ISO 17696			X
Insoles – Abrasion resistance	ISO 20868			X
For the lining Textiles – Determination of the abrasion resistance of fabrics by the Martindale method – Part 2: Determination of specimen breakdown	ISO 12947-2			X
Test methods for uppers, linings and insocks — Colour fastness to rubbing	ISO 17700	X	X	

Simultaneously, an alternative approach in line with ADEME-AFNOR PCR for footwear[212] could also be considered. Recent works conducted by the responsible ADEME-AFNOR Working Group (under validation) have been made as specified in the box below.

[211] 182.5 days during which the pair of footwear is worn (6 months worn every day, 1 year worn every other 2 days…). This approach comes from the PCR of ADEME-AFNOR and is the default scenario when performance tests have not been done.

[212] (BP X 30-323-1, 2010)

ADEME-AFNOR's approach for durability

The durability of the footwear is based on five tests based on the respective ISO norms, presented in Table 20.

For each test, two limits are set:

- Minimum value representing a very poor resistance of the footwear, supposed to be the lowest possible on the market,
- Maximum value representing a very high resistance according to the test method and for which it is assumed the footwear will never reach the breaking point during its life cycle.

A linear score between 0 and 7.5, and based on the minimum and maximum values is then attributed for each test. Each score is then weighted with respect to its relative importance on the overall durability of footwear, and an overall score is given.

If this approach is used for the EU Ecolabel, the following parameters should be defined:

- Minimum and maximum values for each test,
- Weighting between the different tests thresholds for the final score that must be reached.

Table 21: Durability parameters

		General sports	School footwear	Casual	Men's town	Cold weather footwear	Women's town	Fashion	Infants	Indoor
Uppers flex resistant: (kc without visible damage)		Dry = 100 Wet = 20	Dry = 100 Wet = 20	Dry = 80 Wet = 20	Dry = 80 Wet = 20	Dry = 100 Wet = 20 – 20° = 30	Dry = 50 Wet = 10	Dry = 15	Dry = 15	Dry = 15
Uppers tear strength (Average tear force, N)	Leather Other materials	≥80 ≥40	≥60 ≥40	≥60 ≥40	≥60 ≥40	≥60 ≥40	≥40 ≥40	≥30 ≥30	≥30 ≥30	≥30 ≥30
Outsoles flex resistance	Cut growth (mm) Nsc = no spontaneous crack	≤4 Nsc	≤4 Nsc	≤4 Nsc	≤4 Nsc	≤4 Nsc at – 10 °C	≤4 Nsc			
Outsoles abrasion resistance	D ≥0,9 g/cm³ (mm³) D < 0,9 g/cm³ (mg)	≤200 ≤150	≤200 ≤150	≤250 ≤170	≤350 ≤200	≤200 ≤150	≤400 ≤250			≤450 ≤300
Upper-sole adhesion (N/mm)		≥4,0	≥4,0	≥3,0	≥3,5	≥3,5	≥3,0	≥2,5	≥3,0	≥2,5
Outsoles tear strength (Average strength, N/mm)	D ≥ 0,9 g/cm³ D < 0,9 g/cm³	8 6	8 6	8 6	6 4	8 6	6 4	5 4	6 5	5 4
Colour fastness of the inside of the footwear (lining or inner face of the upper). Grey scale on the felt after 50 cycles wet		≥2/3	≥2/3	≥2/3	≥2/3	≥2/3	≥2/3		≥2/3	≥2/3
Lining and insoles abrasion resistance		>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 25 600 dry >=12 800 wet	>= 8 400 dry >=1 600 wet

AHWG1 stakeholder feedback

The division between different shoes categories should be specified, with attention paid to the new leather definition.

Most stakeholders confirmed that norms and threshold values referred in the current EU Ecolable criteria under revision were up-to-date and it was suggested adding a requirement on resistance to abrasion for shoe insoles: ISO 17700: Footwear -- Test methods for uppers, linings and insocks -- Abrasion resistance.

One stakeholder suggested to add various additional technical requirements among them: delamination resistance (on upper ISO 17698, on soles ISO 20875), elongation (ISO 17706), seam resistance (ISO 17697), etc.

Some stakeholders highlighted that Wellington shoes should be added to the table.
The belt flexing test was proposed for children shoes for flex resistant testing, as being more appropriate than Ross flexer.

Generally stakeholders agreed with the current limit values.

Follow-up research

A technical centre has been contacted to set out the proposal that ensure the high technical performance of an article :

- Following stakeholders feedback, the current limit values and existing methods are perceived as ambitious and up-to-date. No proposal for the update was received.
- Footwear categories are specified in respective norms. They are well known for footwear manufacturers, the additional specification were perceived as no necessary.
- Articles moulded in one piece were advised to be integrated in existent categories using respective limit values.
- For shoe insoles abrasion, the technical centre suggested the limit values >= 25 600 dry and >=12 800 wet for the infant category.
- The values for shoe insoles abrasion were added on the base of EN 17704 and additional information provided by footwear industry. The values proposed should be subjected to further consultation.

Proposal

1. The proposed limits for insoles abrasion should be discussed with stakeholders.
2. The possibility to create specific category for injection moulding footwear should be discussed with stakeholders.

Questions

1. Shall other testing methods be used?
2. Should additional tests be required?
3. Are the proposed limit values shoe insoles abrasion appropriate?
4. Shall injection moulding footwear be included in an existent category? Or should a specific one be created for it?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- It was suggested to add requirement on at least slip resistance, water vapour permeability of upper complex and water resistance if claimed.

Follow up research and proposals

EU Ecolabel criteria for footwear are meant to provide product with the best environmental performance still ensuring product durability. Slip resistance requirements are covered by the protective equipment test method for footwear (ISO 20344). Proposed technical specification is considered to fall under the scope of PPE Council Directive 89/686/EEC therefore independently from ecological criteria PPE products shall ahead of another requirements fulfil respective performance levels.

Table 4 from the previous proposal of the criterion was integrated into Table 5 (current Table 4). The numbering was adapted accordingly.

Water resistance parameter was added for footwear claimed as water resistant. The performance level was linked to the use of membranes with incorporated water repellence function, being incorporated into Criterion 7.

2.3.8 CRITERION 9. Energy and waste management during footwear assembly

The introduction of the criterion was supported by the majority of stakeholders. Difficulties to precisely and quantitatively define the wastages efficiency led to the proposal that does not set specific limit values, but rather ensures the introduction of the comprehensive waste management plan at the production site.

Criterion proposal, 1st AHWG October 2013
Proposed criterion The applicant shall have effective waste management policies and procedures and/or a waste management programme. Assessment and verification: Conformance with this requirement shall be stated in writing by the applicant company. This statement shall be accompanied by documentation that: - describes the waste management policies, procedures and programmes; and - includes annual reports to on waste generation and management. The applicant may record and provide the wastage rate for its assembly site, and the production site of its suppliers. The wastage rate may be is calculated as follows: the mass of output products minus the mass of input materials) divided by the mass of input materials.
Criterion proposal, 2nd AHWG May 2014
The implementation of the waste management scheme at the footwear manufacturing stage should be demonstrated. The waste management plan should at least meet the following conditions: (i) Dedicated storage space to cater for recyclable materials generated during the production phase shall be provided. The waste collection area provided with the different containers shall be clearly labelled for recycling and adequately dimensioned according to the plant operation. (ii) A waste management plan shall be developed containing information on, the estimated amount of waste generated broken down by type according to the Directive 2008/98/EC on Waste, how to collect the waste generated and giving instructions on how to dispose of the separated waste streams. Assessment and verification: The applicant shall declare the compliance with the criterion supported by the following documentation: (i) Short description of waste management programme implemented; and (ii) Report on the quantity of waste generated together with quantitative information on applied collection, transportation, treatment, disposal, recycling and recovery for all waste streams. Report should refer to the period of 12 months prior to the date of application on the annual base.
Criterion proposal, November, 2014
Energy and waste management plan at the footwear assembly site shall be implemented. The waste management plan shall include waste management practices from material cutting to final product packaging. The waste management plan shall meet the following conditions: (i) Dedicated storage space to cater for recyclable materials generated during the production phase shall be provided. The waste collection area provided with the different containers shall be clearly

labelled for recycling and adequately dimensioned according to the plant operation.
(ii) Shall be developed containing information on the estimated amount of waste generated broken down by type according to the Directive 2008/98/EC[213] on waste, indicating how to collect the waste generated and giving instructions on how to dispose of the separated waste streams.

Option 1
(iii) The energy consumption shall be reported according to EN 14602. An energy management plan shall be implemented and include at least the annual target for reducing the average energy consumption per unit, and initiatives to reach the objective.

Option 2
(iii) The energy consumption shall be reported according to EN 14602 containing information on the electricity energy mix used. An energy management plan in which is reported the amount of energy used (broken down per process, technology, product type and number of produced units) shall be implemented and include at least the annual target for reducing the average energy consumption per unit, and initiatives to reach the objective.

Assessment and verification: the applicant shall declare the compliance with the criterion supported by the following documentation:

(i) Short description of the waste management programme implemented; and
(ii) Report on the quantity of waste generated together with quantitative information on applied collection, transportation, treatment, disposal, recycling and recovery for all waste streams. Report shall refer to the period of 12 months prior to the date of application on the annual base, or
(iii) Where material cutting for upper or soles take place in different geographical location the applicant shall provide the documentation specified under verification requirements point (ii) and (iii) from the supplier(s) of footwear structural elements.
(iv) The applicant is requested to provide the relevant information on energy consumption in manufacturing according to EN 14602, and the supporting documents that describe the energy management plan to be implemented including the targets and initiatives.

AHWG1 technical discussion
The Commission statement requires assessing the possibility of developing a criterion on the waste management.

The European Union's approach to waste management is based on an integrated, hierarchical system that considers the following order of prioritization: prevention, re-use, recycling, recovery, and disposal[214].

According to the LCA study findings, wastage rate is a significant parameter because it directly relates to the mass of input materials needed to produce a certain amount of pairs. The increase in wastages rate is proportional to quantity of input materials required, and, as previously highlighted (Task 3 of the Preliminary Report) the production of input materials is one major hot spot identified.

Footwear manufacturing involves the use of a large range of materials that are processed to achieve the appropriate size and format. The shape of the components to be cut is rarely the same,

[213] OJ L 312, 22.11.2008, p. 3
[214] In line with the Framework Waste Directive (2008/98/EC)

therefore, the optimization of material cutting is one of the key challenges of the material management. This is especially true when leather is used because it is neither homogenous nor rectangular.

If the wastage is reduced by 50 %[215] (from 15 % to 5% - maximum and minimum values from stakeholders), the impacts on the environment for on pair of footwear could be lowered between 4 and 12 %, depending on the impact category.

By optimizing the supply chain and employing material saving principles during the footwear manufacturing processes, considerable decrease in wastage could be achieved.

Because the production of footwear may take place on many different geographical locations, the information collection would require an advanced state of control and management of the entire supply chain. Having a criterion only for the assembly site would limit the benefits of such improvement. However, it could establish a solid base for improving material management, and possibly boost further research and innovation, such as reuse post-manufacturing rubber and leather cuttings, e.g., for sole of new shoes[216] In the long-term, the manufacturer will always benefit from the introduction of a comprehensive waste management system.

Most stakeholders (~70%), including corporations, confirmed the feasibility of introducing a requirement for a waste management system, with the following caveats:

- It could be based on LCA.
- It would be possible to set requirements on the waste management system at the production stage, but not for the product end of life.
- Circular economy could be promoted (re-use of waste as material or energy)
- It could be based on the efficiency (a percentage of the production)

Several stakeholders stated that a waste management system is not a quantitative indicator of the environmental performance of the product, being somewhat subjective. The EU Ecolabel criteria should remain clear and straightforward.

The parameter is important, hence, the proposal is to include it in the criteria. Surveyed stakeholders have also indicated that this criteria area is important. Among other things, they proposed to use the efficiency as percentage of the production as indicator.

The New Zealand Trust sets qualitative standards on the waste management. The licence holder must report annually the quantities and types of wastes generated, recovered for reuse, recycled, disposed, and burned by them and their suppliers. They also must have effective waste management policies and procedures and/or a waste management programme. They also must report initiatives related to the waste management.

The relevance of the “at source prevention” principle and reduction of the quantity of waste generated, supported by the quantitative estimation of the possible environmental savings, support the need for further consultation in order to assess the feasibility of criterion inclusion.

AHWG1 stakeholder feedback

The introduction of the criterion was perceived as right approach. It was proposed to introduce a

[215] Including the reuse

[216] Information gathered through personal communication

requirement on the batch rate instead of the wastage rate. JRC-IPTS clarified that the failure batch rate is an issue of quality and would be reduced to a minimum.
Some stakeholders agreed on such a criterion but raised the difficulty to precisely and quantitatively define the wastages efficiency.

Follow up research

No new data has been provided in relation to the quantity of waste generated during footwear assembly. Apart of New Zealand Ecolabelling Trust, no other schemes of relevance refer to the criterion on waste generation at production site.

The Waste Framework Directive 2008/98/EC sets out fundamental definitions, basic principles and overall strategic aims and lays down requirements for all types of waste, unless they are specifically regulated by other directives. The WFD applies to any substance or object which the holder discards or intends to or is required to discard (Article 3, point 1).

The EU's Sixth Environment Action Programme identifies waste prevention and management as one of four top priorities. Waste management plans have a key role to play in achieving sustainable waste management that is in line with EU waste legislation. The Waste Framework Directive, revised in 2008, streamlines waste legislation, incorporating rules on a number of issues such as the management of hazardous waste and waste oils. The European Union's approach to waste management is based on three principles[217]:

- Waste prevention:
- Recycling and reuse
- Improving final disposal and monitoring

Following UNEP indications[218] on forming the premise for Integrated Solid Waste Management (ISWM) system based on 3R (reduce, reuse and recycle) principle, developing and implementing ISWM requires comprehensive data on present and anticipated waste situations, supportive policy frameworks, knowledge and capacity to develop plans/systems, proper use of environmentally sound technologies, and appropriate financial instruments to support its implementation. It is therefore propose to introduce the criterion without setting any specific threshold, but rather to gather information and stimulate the producer to maximise resources management through implementation of comprehensive waste management plan.

Proposal

As no consensus among stakeholders was achieved concerning the feasibility of possible introduction of quantitative threshold for the quantity of waste generated, it is suggested to propose the qualitative criterion in line with the New Zealand Ecolabeling Trust approach.

Questions

- Is the introduction of qualitative criterion perceived as the right approach?
- Are there any further specification and/or verification procedures that should be listed under criterion?

AHWG2 stakeholder feedback and follow-up research

[217] http://ec.europa.eu/environment/waste/
[218] Developing Integrated Solid Waste Management Plan Rraining Manual. Volume 2: Assessment of Current Waste Management System and Gaps therein. United Nations Environment Programme. 2009

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback regarding waste management criterion

- In general, the proposal was perceived by stakeholders as workable.
- Some opinions expressed classified the criterion as qualitative without pass/fail capacity.
- Listing of waste category with information on the waste quantity generated was mentioned as complicated. The request to implement a waste management plan was assumed as a more accurate approach that could be evaluated as pass or fail criteria.
- It was suggested to introduce requirement on waste minimisation or waste prevention plan.
- Reduction of materials used for footwear production was assumed as daily practice, the major problem identified was packaging.
- The need to define footwear assembly stage was pointed out.

Follow up research and proposals

Waste prevention and proper management was identified as one of the best practices applied by footwear industry as analysed in the Preliminary Background Report. High environmental benefit/high savings potential possible to be achieved through waste management according to environmental standards in the textile and shoe sector (UBA, 2011)[219] are:

- Prevent the pollution of waste with hazardous waste via strict separation of waste.
- Save material in packaging.
- Use returnable containers.
- Organise processes in a way that avoids waste or at least reduces the volume of waste
- Recycle waste.

According to Ferreira et al[220] residues from footwear roughing and carding operations represent 5–15% (w/w) of the solid wastes generated by shoe-making companies. Following the AFIRM group information, the highest quantity of waste is generated during material cutting[221]:

- Waste from upper = 132.6 tons/ M pairs
- Waste from sole = 118 tons/ M pairs
- Adhesives, oils, solvents = 4.6 tons/ M pairs
- Household type waste = 10.8 tons / M pairs

Increase in wastage rate is proportional to the quantity of input materials required, being identified as one of the possible improvement areas within the LCA study performed[222].

The European Union's waste management policy is based on an integrated, hierarchical system of prevention, re-use, recycling, recovery and disposal[223]. It is therefore rational that the applicant

[219] http://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/4289.pdf
[220] Ferreira, M.J., Almeida, M.F., Fernanda Freitas, F. 2011. Formulation and Characterization of Leather and Rubber Wastes Composites. Polymer Engineering and Science 51, pp 1418-1427
[221] http://www.afirm-group.com/hongkong/17%20Hengstmann%20Waste%202010.pdf
[222] http://susproc.jrc.ec.europa.eu/footwear/docs/EU_Ecolabel_Footwear_%20Background%20Report.pdf
[223] In line with the Framework Waste Directive (2008/98/EC)

should demonstrate the implementation of waste management plan. To stimulate the material saving and develop a comprehensive solutions a plan should specify the objectives that need to be met, formulating appropriate strategies, and identifying the necessary implementation means. Specification of waste category is an integral part of waste management system. Waste management plan encompasses in most models the geographical coverage of the planning area at regional/local scale (e.g. availability of recycling sites, MSW segregation system, etc.).

Footwear manufacturing/assembly boundaries in general manner could be regarded as a series of operations conducted from material cutting to final product packaging. These operations might occur in different sites, geographical locations and/or companies, e.g. footwear manufacturer is purchasing ready-made bottom. In this case the information collection by the applicant could be subjected to the additional administrative burden. However, the verification of the criterion should cover these production stages that rare responsible for the main waste stream generation. It is therefore propose to ensure that the site responsible for material cutting is covered by the implemented waste management strategy.

The new criterion intends to establish the solid base for material management practices in footwear sector, and possibly boost further research and innovation, such as reuse of post-manufacturing rubber and leather cuttings, e.g., for sole-formation of new pair of shoes[224].

The criterion should give the applicant enough flexibility to adapt the waste management plan to the local conditions; this is why no specific requirements on the waste segregation or recycling system are proposed to be introduced.

Energy requirement

The requirement to report the annual energy consumption per production unit according to EN 14602 and demonstrate the implementation of energy management plan was integrated into the Criterion 9. The specific background information and rationale are included under Criterion 5. Two proposals were developed and will be presented in the EUEB meeting, as given above in the criteria section.

[224] Information gathered through personal communication

2.3.9 CRITERION 10: Social requirements

The introduction of the proposed criterion was generally welcomed by stakeholders. The wording from "Corporate Social Responsibility" to "Social requirements" was changed to reflect the criterion intention.

Criterion proposal, 1st AHWG October 2013
Applicants shall ensure that the fundamental principles and rights at work as specified in the International Labour Organisation's (ILO) Core Labour Standards, the UN Global Compact and the OECD Guidelines for Multi-National Enterprises shall be observed by all production sites used to manufacture the licensed product(s). The ILO Core Standards that shall apply are: 029 Forced Labour 087 Freedom of Association and Protection of the Right to Organise 098 Right to Organise and Collective Bargaining 100 Equal remuneration 105 Abolition of Forced Labour 111 Discrimination (Employment and Occupation) 155 Occupational safety and health 138 Minimum Age Convention 182 Elimination of the Worst Forms of Child Labour These standards shall be communicated to production sites used to manufacture the final product. Assessment and verification: The applicant shall demonstrate third party verification of compliance, using independent verification or documentary evidence, including site visits by auditors during the Ecolabel verification process for all production sites in the supply chain for their licensed products. This shall take place upon application and subsequently during the license period if new production sites are introduced.
Criterion proposal 2nd AHWG, May 2014
Criterion applies to textile and leather processing for footwear products and to the site of final product assembly. Applicants shall ensure that the fundamental principles and rights at work as specified in the International Labour Organisation's (ILO) Core Labour Standards, the UN Global Compact and the OECD Guidelines for Multi-National Enterprises shall be observed by textile and leather production sites used to manufacture the licensed product(s) and by the site of final assembly of the product. For the purpose of verification the following ILO Core Labour Standards shall be referred to: 029 Forced Labour 087 Freedom of Association and Protection of the Right to Organise 098 Right to Organise and Collective Bargaining 100 Equal remuneration 105 Abolition of Forced Labour 111 Discrimination (Employment and Occupation) 155 Occupational safety and health 138 Minimum Age Convention 182 Elimination of the Worst Forms of Child Labour These standards shall be communicated to respective production sites used to manufacture the final product.

Assessment and verification: The applicant shall demonstrate third party verification of compliance, using independent verification or documentary evidence, including site visits by auditors during the Ecolabel verification process for textile and leather production sites used to manufacture the materials for the licensed product(s) and by the site of final assembly of the product. This shall take place upon application and subsequently during the license period if new production sites are introduced.
For textiles, as proof of compliance to these requirements the award of the EU Ecolabel for textiles when it is based on the EC Decision XX/XX/XXX is also accepted.

Criterion proposal, November 2014

Requirements in this criterion apply to the final footwear assembly site.
Applicants shall ensure that the fundamental principles and rights at work as described in the International Labour Organisation's (ILO) Core Labour Standards the UN Global Compact and the OECD Guidelines for Multi-National Enterprises shall be observed by assembly site(s) used to manufacture the licensed product(s). For the purpose of verification the following ILO Core Labour Standards shall be referred to:

- 029 Forced Labour
- 087 Freedom of Association and Protection of the Right to Organise
- 098 Right to Organise and Collective Bargaining
- 100 Equal remuneration
- 105 Abolition of Forced Labour
- 111 Discrimination (Employment and Occupation)
- 155 Occupational safety and health
- 138 Minimum Age Convention
- 182 Elimination of the Worst Forms of Child Labour

Assessment and verification: the applicant shall demonstrate third party verification of compliance, using independent verification or documentary evidence, including site visits by auditors at the final footwear assembly site.

AHWG1 technical discussions

Responding to the new challenges and legal requirements within the recent years, footwear and apparel manufacturers and brands have received increasing attention from Governments, NGOs and consumers in relation to their environmental performance. The common trends of outsourcing practices have also raised the importance of Corporate Social Responsibility (CSR) for overseas suppliers.

Among the surveyed stakeholders, less than half (30-40%) have signed a declaration such as the "Global Compact", or equivalent, or work with an international scheme (SA8000, ISO26000…), and a few hold a certification and/or are certified through an industry or third-party CSR scheme.

The Blue Angel sets in general information that the Blue Angel eco-label may be awarded to products if the manufacture complies with the ILO Core Labour Standards. The Nordic Swan sets a criterion requiring the licensee to follow the ILO Conventions at all production sites for the ecolabelled textile, hide and/or leather.

AHWG1 stakeholder feedback

The introduction of the CSR criterion was generally welcomed. There was no distinction in the criteria application between European and –extra European production. The difficulties in the proposed assessment and verification were mentioned. Membership of Social Networks was perceived as a possible advantage. It was further discussed if self-declaration or social network

verification could be a possible solution.

Some stakeholders that expressed negative opinions on the inclusion of this criterion stated that it went beyond the environmental burdens of the EU Ecolabel.

One Competent Body suggested aligning this criterion with the results from the Horizontal Task Force on social criteria.

Follow-up research

The EU Ecolabel Regulation Art 6.3. states: *"EU Ecolabel criteria shall be determined on a scientific basis considering the whole life cycle of products. In determining such criteria, the following shall be considered: (...) e) where appropriate, social and ethical aspects, e.g. by making reference to related international conventions and agreements such as relevant ILO standards and codes of conduct."*

The EU Ecolabel for textiles criterion for CSR is based on the discussions that took place during the Horizontal Task Force on social criteria where the key points of relevance to criteria development were:

- There is no precedent for achieving or successfully evidencing 100% compliance;
- It is better to focus on incremental improvement against minimum standards than absolute requirements;
- Avoid requirements that create potential for scandals and build-in routes to take action if they occur (a safety net);
- Requirements for due diligence can be applied to larger companies, whilst requirements applied to SME's should be less onerous;
- Third party initiatives and certifications can play a role in reducing the burden for CP's/procurers but they are costly and may not always be meaningful.

Proposal

1. It is suggested to align the criterion with EU Ecolable criteria for textile, adapting wording to nature of the product group footwear.
2. It is proposed to introduce minimum criteria based on adherence to the eight ILO Core Conventions.

Questions

- Which is the capacity of footwear manufacturer to introduce social requirements into specification of materials to be supplied?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- During the consultation process it was stated that the verification of the criterion is problematic mainly because of complexity of the supply chain and the production outscoring. This would result in additional workload and discourage uptake. It was proposed to focus on that part of the production process where problems are most likely to occur. Considering the geographical dislocation of footwear manufacturing (including component materials) clear boundaries should be established.

- The criterion was proposed to be aligned with the results from the Horizontal Task Force on social criteria.

Follow up research and proposal

CSR issues form an important part of the promotion of the Ecolabel to manufacturers in countries which supply the EU. In some countries where social and environmental standards may not be as high, organisations such as the United Nations Environment Programme (UNEP) are actively engaged in promoting the market opportunities created by the ecolabel [225].

The verification of social requirements for so commonly outsourced product as footwear was perceived by stakeholders as complicated. It might also be difficult for the Competent Bodies to evaluate documentation or to evaluate findings from audits. One possibility is therefore verification of compliance for the assembly sites by recognised third party assurance schemes. Schemes identified as being used by industry include:

- Business Social Compliance Initiative (BSCI)
- Global Social Compliance Programme (GSCP)
- Ethical Trading Initiative (ETI)
- Fair Labor Association (FLA)
- Fair Wear Foundation (FWF)
- Social Accountability 8000 (SA8000)
- Worldwide Responsible Apparel Production (WRAP)
- Global Reporting Initiative (GRI)

Codes of Conduct included within these schemes specifically address human rights, labour rights, working agreements and salaries and occupational health and safety issues.

The ecolighting criteria were the first Ecolabel criteria to introduce a CSR criterion in which reference is made to basic CSR standards [226]. Criteria within environmental schemes such as GOTS, Oeko-tex 1000 and Bluesign also address CSR issues and, provided that third party verification has been carried out, could be used as a harmonised compliance route.

An option to use existing third party verification routes would reduce the workload of the Competent Bodies whilst still ensuring there is a focus on these areas and would force the producers to actively evaluate if they are in compliance with the suggested criteria. In situations where declarations may be questioned Competent Bodies could request the documentation backing the declaration.

The preliminary findings of the Horizontal Task Force on Social Criteria addressed social criteria for EU Ecolabel in the following way:

- The Blue Angel focuses on the International Labour Organisation's core conventions [227] which have been adopted as 'basic principles'. These conventions are contained within the ILO's Declaration on fundamental principles and rights and work[228].

[225] UNEP, *Enabling developing countries to seize ecolabel opportunities project*, Accessed 2012, http://www.unep.fr/scp/ecolabelling/

[226] Commission decision of 6 June 2011 on establishing the ecological criteria for the award of the EU Ecolabel for light sources

[227] International Labour Organisation, *Conventions and recommendations*, Accessed 2012, http://www.ilo.org/global/standards/introduction-to-international-labour-standards/conventions-and-recommendations/lang--en/index.htm

- The Nordic Swan has focused on requirement for open/public CSR reports and plans to audit against, a requirement for SA8000 compliance[229], and a license revocation option. Their experience is that is very difficult to comply fully with SA8000.
- The Netherlands have developed an approach to 'social public procurement' which is applied to larger contracts[230]. The approach is based on, as a minimum, an annual requirement for supply chain risk assessment, self-declarations of 'reasonable endeavours' and/or certified performance against standards or codes established by supply chain initiatives.

A number of relevant principles and codes of conduct are pointed pout – including the UN 'Protect, respect, remedy' framework which promotes a due diligence approach, the UN Global Compact which is aimed at companies, OECD guidelines for multi-nationals, ISO26000 for multi-stakeholder reporting and industry initiatives such as BSCI and the CSR 2010 group.

Key points of relevance to product criteria development are:

- There is no precedent for achieving or successfully evidencing 100% compliance;
- It is better to focus on incremental improvement against minimum standards than absolute requirements;
- Avoid requirements that create potential for scandals and build-in routes to take action if they occur (a safety net);
- Requirements for due diligence can be applied to larger companies, whilst requirements applied to SME's should be less onerous;
- Third party initiatives and certifications can play a role in reducing the burden for CP's/procurers but they are costly and may not always be meaningful.

After consultation with industry stakeholders and considering the specificity of the product group footwear it is proposed to require criterion verification referring to the final product assembly site. Addressing 9 fundamental rights from ILO convention was assessed as practical and feasible criteria.

[228] International Labour Organisation, *ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up,* http://www.ilo.org/declaration/thedeclaration/textdeclaration/lang--en/index.htm

[229] Social Accountability International, SA8000 Standard, http://www.sa-intl.org/

[230] European Commission, First step for social criteria in procurement, December 2009, http://ec.europa.eu/enterprise/policies/sustainable-business/corporate-social-responsibility/reporting-disclosure/swedish-presidency/files/nat_laws_and_policy_init/nl_social_criteria_in_public_procurement_-_summary_en.pdf

2.3.10 CRITERION 11: Packaging

Major proposed changes

Following stakeholders suggestion packaging made from other materials e.g. textile should also be included.

Present criterion, Decision 2009/563/EC
Where cardboard boxes are used for the final packaging of footwear, they shall be made of 100 % recycled material. Where plastic bags are used for the final packaging of footwear, they shall be made of, at least, 75 % recycled material or they shall be biodegradable or compostable, in agreement with the definitions provided by the EN 13432. Assessment and verification: a sample of the product packaging shall be provided on application, together with a corresponding declaration of compliance with this criterion. Only primary packaging, as defined in the Directive 94/62/EC of the European Parliament and the Council, is subject to the criterion.
Suggested criterion October, 2013
Where cardboard boxes are used for the final packaging of footwear, they shall be made of 100 % recycled material. Where plastic bags are used for the final packaging of footwear, they shall be made of at least, 75 % recycled material~~, or they shall be biodegradable or compostable, in agreement with the definitions provided by the EN 13432~~. Assessment and verification: a sample of the product packaging shall be provided on application, together with a corresponding declaration of compliance with this criterion. Only primary packaging, as defined in the Directive 94/62/EC of the European Parliament and the Council, is subject to the criterion.
Suggested criterion, May 2014
11 (a)Where cardboard boxes are used for the final packaging of footwear, they shall be made of 100 % recycled material. Where ~~plastics~~ bags are used for the final packaging of footwear, they shall be made of at least 75 % recycled material and/or they should be 100% recyclable. Packaging shall be so manufactured that the packaging volume and weight is limited to the minimum adequate amount to maintain the necessary level of safety, hygiene and acceptance for the packed product and for the consumer. 11 (b)The product packaging may not contain dimethylfumarate. <u>Assessment and verification</u>: Only primary packaging, as defined in the Directive 94/62/EC, is subjected to the criterion. (i) a picture of product packaging shall be provided on application, together with a supportive declaration of compliance with this criterion. (ii) The applicant should demonstrate compliance with the criterion 10 (b) by providing test results for dimethylfumarate content in the packaging according to the specification set in Criterion 7. The laboratory testing should be conducted on random sampling

Criterion proposal, November 2014

This criterion applies only to primary packaging, as defined in the Directive 94/62/EC.[231]

(a) Cardboard boxes

Cardboard boxes used for the final packaging of footwear shall be made of 100% recycled material

(b) Plastic and textile bags

Plastic bags used for the final packaging of footwear shall be made of at least 80% of recycled material.

Assessment and verification: the applicant shall provide a declaration of compliance specifying the material composition of the packaging and the share of recycled and virgin material.

AHWG1 technical discussions

Although the packaging phase has not been highlighted as an environmental hotspot through the LCA literature review and the specific LCA, the improvement of environmental performance of packaging facilitates later waste management and reduces the resource consumption. Most brands consulted optimise their packaging by reducing its size and the weight, and by the using 100% recycled and recyclable materials, e.g., 100% recycled paper or bio-plastics as shoe box fillers. Puma developed a reusable bag which consumes much less material/fuel/water than the traditional shoes box (65% less cardboard and 60% decrease in manufacturing-related fuel and water)[232].

According to stakeholders' feedback, the current criterion should be strengthened. The proposal is to raise the percentage of recycled plastic content. The exact percentage should be discussed with stakeholders.

AHWG1 stakeholder feedback

One Competent Body stated that 100% recycled material for cardboard was questionable in regard to product quality. It was proposed to lower the threshold. The use of exact wording was pointed out: "100% recycled and recyclable material". The proposal to include paper, textile, organic cotton, flex bags was raised. The proposal to remove plastic bags and rather broadly refer to materials that are biodegradable or compostable.

During the consultation process compostability and biodegrability was perceived by some stakeholders as limited added value from an environmental point of view. In case, the waste is not correctly segregated and recollected, the possible environmental benefit is questionable. The focus should be rather on prevention first, then re-use, then on recyclability but not on biodegradability or compostability. This approach is in line with the Waste Framework Directive 2008/98/EC and the waste hierarchy. Additionally, the marking of a packaging as biodegradable is forbidden in some EU Member States, and may incite the consumer to throw the waste into the nature instead of in the specific collecting system. Most composting facilities in fact separate plastics from the waste stream and they cannot differentiate compostable from non-compostable plastics.

Follow-up research

PlasticsEurope defines biodegradable and compostable plastics as follows[233]:

[231] Official Journal L 365 , 31/12/1994 p. 0010 - 0023

[232] http://www.fuseproject.com/

[233] http://www.plasticseurope.org/what-is-plastic/bio-based-biodegrabable-plastics/biodegradable-plastics.aspx

- Plastics are biodegradable when their degradation is caused by the action of micro-organisms such as fungi or bacteria. The material is ultimately converted into water, carbon dioxide and/or methane, as well as new biomass. The definition does not include any requirements concerning the length of the degradation process.
- Plastics are compostable when their biodegradation is compatible with the conditions (temperature, humidity level, time) found in composting facilities. According to European standards, the degradation process should take between 6 and 12 weeks.

FuturEnergia[234] highlight that biodegradable plastics have benefits when they are thrown in the environment and the focus should be done on waste prevention. Compostable plastics require specific conditions to biodegrade properly (micro-organisms, temperature, and humidity). Biodegradable plastics are recommended to be used for specific applications where the biodegradability is an additional functionality, such as:

- Agriculture – plastic sheeting that can be ploughed-into biodegradable mulch and seed films;
- Medical – absorbable sutures; micro-devices containing medicine, which break down inside the body.

According to (Environment Australia, 2002)[235], biodegradable plastics have both environmental benefits and dangers. More importantly, the report recommends to identify the following aspects before implementation of requirement on biodegradable plastics' usage :

- disposal routes;
- appropriate recovery systems;
- processing infrastructure required; and
- the product has been tested against nationally agreed standards to ensure that the disposal route is appropriate and is environmentally sustainable.

At this time, the ability to handle bioplastics in a way that is more environmentally sustainable than regular plastics poses significant challenges. The Green Paper on a European Strategy on Plastic Waste in the Environment (2013) addresses the environmental benefits and drawbacks of biodegradable plastics. It clearly states that the environmental savings might be generated under very specific conditions. Most compostable plastics require high-temperature achievable only in a commercial or industrial composting facility to successfully decompose. Investment into composting facilities providing sufficient pre-processing and an adequate composting process would be necessary. Additionally, the exact influence of biodegradable plastic on aquatic environments, as well as compost toxicity, is yet further to be investigated.

The technologies of separation of conventional and bioplastics are still expensive and not commonly used mostly because the market share for bioplastics is still relatively small, compared to the total secondary market for plastics. If both plastic types remain mixed together, bioplastics might hinder the recycling process considering that they are made of substances that are incompatible with regular plastics.

In line with Packaging Directive 94/62/EC , Articles 14, 4 and 5) measures should be taken to ensure that the re-use/recycling/recovery targets for packaging and packaging waste will be reached as referenced in Annex III point 3. of Directive 94/62/EC of the European Parliament and the Council:

[234] http://www.futurenergia.org/ww/en/pub/futurenergia/chats/bio_plastics.htm
[235]http://www.environment.gov.au/archive/settlements/publications/waste/degradables/biodegradable/pubs/biodegradable.pdf

(a) Packaging recoverable in the form of material recycling: packaging must be manufactured in such a way as to enable the recycling of a certain percentage by weight of the materials used into the manufacture of marketable products, in compliance with current standards in the Community. The establishment of this percentage may vary, depending on the type of material of which the packaging is composed.

(b) Packaging recoverable in the form of energy recovery: packaging waste processed for the purpose of energy recovery shall have a minimum inferior calorific value to allow optimization of energy recovery.

(c) Packaging recoverable in the form of composting: packaging waste processed for the purpose of composting shall be of such a biodegradable nature that it should not hinder the separate collection and the composting process or activity into which it is introduced.

(d) Biodegradable packaging: biodegradable packaging waste shall be of such a nature that it is capable of undergoing physical, chemical, thermal or biological decomposition such that most of the finished compost ultimately decomposes into carbon dioxide, biomass and water.

The Recycled Paper Alliance promotes the use of 100% recycled paperboard, states that the performances are equivalent to virgin paperboard. The cardboard boxes are made of different layers set together to ensure product durability.

Proposal

1. Having in mind the fact that environmental benefits of biodegradable and compostable plastics are not straightforward, especially in terms of very limited capacity of footwear manufacturer to control user behaviors, in order to follow the waste hierarchy established by the Waste Framework Directive, it is suggested to delete wording that refers to biodegradable or compostable plastics.
2. The reduction of packaging volume and quantity will depend on the nature of the final product to maintain the necessary level of safety, hygiene and acceptance for the packed product and for the consumer. Nevertheless, the packaging volume and weight should be limited to the minimum adequate amount. The introduction of horizontal requirement on the quantity and volume of packaging use is subjected to the individual product requirements, thus complicating the possible verification of the possible requirement. The ability of Competent Body to verify such approach should be further discussed.
3. As suggested by stakeholders, it is proposed to include the requirement on recycled content for bags for all types of materials (i.e. deletion of the plastic specificity).
4. It is suggested to keep the recycled content of cardboard boxes as 100%. However, this shall be confirmed by stakeholders.
5. Competent Bodies suggested removing requirements on providing packaging samples. Accordingly packaging picture will be required to proceed with the criterion verification.

Questions

- Should the recycling content of bag be raised to xx%?
- Should the recycling content of cardboard be lowered to xx%?
- Which is the feasibility of Competent Body to verify if the quantity packaging used is adequately reduced?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- Stakeholder stated that packaging is of high relevance for the footwear protection during transport and storage.
- A question was raised on the possibility to introduce hazardous substances requirement for the packaging.
- Input on possible correlation between the weight of product and weight of the packaging was requested from stakeholders.
- The requirement on material recyclability was welcome, however assed as difficult to be defined as all materials could be considered recyclable (mechanical or feedstock recycling or energetic recovery).
- The question on the need to use additional packaging was addressed e.g. bag inside box..

Follow up research and proposals

Dimethylfumarate

Prohibition of placing on the market (or being made available) products which contain dimethylfumarate is regulated under Commission Decision 2009/251/EC with subsequent incorporation into REACH (Annex XVII) under entry 61. The restriction of the use of dimethylfumarate is specified under point 1 (g) (ii) of Appendix to Criterion 7 (Restricted Substance List) of the proposed criteria for the EU Ecolabel revision for Footwear. The use of anti-moulding agents used in the packaging during footwear transportation is proposed to be addressed under point 1 (g) (i) of the proposed RSL (Appendix to Criteiron 7): It was therefore assessed as not necessary to introduce double verification under proposed criterion 11 (b) that was accordingly withdrawn.

Cardboard boxes and paper bags

The vast majority of footwear packaging used on the market is assumed to be corrugated cardboard. In 2007, Nike targeted on use standard shoebox composed of 100-percent recycled cardboard. According to the information gathered from stakeholders most boxes or bags for footwear would already be made with 100% recycled fibres. In 2012, the average recycled content for corrugated boxes in Europe was 94.2% in 2012.

According to the paper industry output there is a shortage of availability of collected paper for recycling in the market. Therefore, it was assessed as relevant to require packaging recyclability, so as to allow another round in the recycling loop. Whereas the paper itself is always recyclable, the choice of adhesives and printing inks in the converting process (making flat paper into final 3D packaging) may render the final packaging non-recyclable. The European Recovered Paper Council (ERPC) is supposed to be make public within a short period of time a score system for packaging recycling.

Plastic bags

Following the ith industry feedback, plastics bags can be made with 100% post-consumer plastic. Most of bags are made of LDPE (no multilayers) being 100% recyclable.

Blue Angel (RAL-UZ 30a)[236] recycled plastic content verification. Blue Angel requires at least 80% of recycled plastics (post-consumer material) in the finished products. Blue Angel refers to EuCertPlast[237], a European audit scheme for the certification for post-consumer plastics recyclers. EuCertPlast sets the requirement to ensure that plastic bag is really made of post-consumer plastic. The certification works according to the European Standard EN 15343:2007 and aims to encourage an environmentally friendly recycling of plastics by standardizing it, particularly focusing on the process for traceability and assessment of conformity and recycled content of recycled plastics.

Considering market availability, it is proposed to align the requirement on the recycled plastic content in plastic bags with Blue Angel criteria. Hovewer, more flexible approach is proposed for the verification of the recycled content mainly to avoid additional barriers for the applicant, and considering that EU Ecolabel refers to footwear.

Reduction of packaging used.

One of the key parameters identified to reduce the quantity of packaging is to optimize its size and the weight. Nevertheless the primary function of packaging is to protect the product from being damage during transport and storage. According to information gathered, products made from very soft skin need additional filling to prevent from scratching during packaging manipulation. The level of product protection during its manipulation was considered as dynamic. The introduction of horizontal requirement on the quantity and volume of packaging use is subjected to the individual product requirements, thus hindering the introduction of common rule. The ability of Competent Body to assess if the quantity of packaging used is adequate was considered as limited being subjected to product specificity, material fragility and transport conditions. The requirement is consequently proposed to be withdrawn.

Recyclability

The standard EN 13430 sets the criteria for packaging recoverable by material recycling[238]. The document specifies the requirements for packaging to be classified as recoverable in the form of material recycling whilst accommodating the continuing development of both packaging and recovery technologies and sets out procedures for assessment of conformity with those requirements. the burden to verify the material recyclability of packaging seems no to be in balance with the outputs of the technical; analysis.

Suitability for available recycling technology is defined as: to ensure that the design of packaging makes use of materials or combinations of materials which are compatible with the known, relevant and industrially available recycling technologies. A set of criteria that should guarantee material recyclability are set in Table 20.

[236]http://www.blauer-engel.de/en/products/home-living/products-made-from-recycled-plastics/products-made-of-recycled-plastics-edition-may-2012
[237] http://www.eucertplast.eu/en/)
[238] EN 13430 Packaging - Requirements for packaging recoverable by material recycling

Table 20. Elaboration of requirement by a decision matrix with interaction between life cycle steps and criteria recyclable packaging

Criteria for recyclable packaging			
Life cycle steps	*Control of packaging construction/composition and processing*	*Suitability for available technologies*	*Release to environment caused by recycling of packaging*
Design		Relevant	Relevant
Production	Relevant		Relevant
Utilisation	Relevant		Relevant
Sorting by the end user	Relevant		
Collection/Sorting	Relevant	Relevant	Relevant

Consumer behaviour

In the relation to the footwear packaging it should be stated that packaging is often kept by the consumer for the footwear storage. Its recirculation into the waste stream is therefore postponed in time.

2.3.11 CRITERION 12: Information on the packaging

Present criterion, Decision 2009/563/EC
(a) User Instructions The following information (or equivalent text) shall be supplied with the product: — 'These shoes have been treated to improve their water resistance. They do not require further treatment.' (This criterion is applicable only to footwear that has been water-resistant treated) — 'Where possible, repair your footwear rather than throw them away. This is less damaging to the environment.' — 'When disposing of footwear, please use appropriate local recycling facilities where these are available.' (b) Information about the eco-label The following text (or equivalent text) shall appear on the packaging: 'For more information visit the EU Ecolabel website: http://www.ecolabel.eu' (c) Information to consumers An information box in which the applicant explains its approach to environmental sustainability should be put on the packaging. Assessment and verification: the applicant shall provide a sample of the product packaging and of the information supplied with the product, together with a declaration of compliance with each part of this criterion.
Suggested criterion (1st AHWG), October 2013
(a) User Instructions The following information (or equivalent text) shall be supplied with the product: — 'These shoes have been treated to improve their water resistance. They do not require further treatment.' (This criterion is applicable only to footwear that has been treated for water-resistance) — 'Where possible, repair your footwear rather than throw them away. This is less damaging to the environment.' — 'When disposing of footwear, please use appropriate local recycling facilities where these are available.' ~~— 'Once a year, wax your leather shoes with appropriate product'~~ ~~— 'Use your shoes correctly, in accordance with their original design'~~ ~~— 'When necessary, please use a shoehorn to put on your shoes'~~ (b) Information about the eco-label The following text (or equivalent text) shall appear on the packaging: 'For more information visit the EU Ecolabel website: http://www.ecolabel.eu' (c) Information to consumers An information box in which the applicant explains its approach to environmental sustainability should be put on the packaging. ~~(d) when available and third-party reviewed, the environmental impacts of the pair of footwear may be displayed.~~ Assessment and verification: the applicant shall provide a sample of the product packaging and of the information supplied with the product, together with a declaration of compliance with each part of this criterion.
Suggested criterion (2nd AHWG), May 2014
12(a) User Instructions The following information (or equivalent text) shall be supplied with the product: — Cleaning and care instruction following the specific product requirements. — 'These shoes have been treated to improve their water resistance. They do not require further treatment.' (This criterion is applicable only to footwear that has been treated for water-resistance) — 'Repair your footwear rather than throw them away. This is less damaging to the environment.' — 'Please use appropriate local recycling facilities to dispose of your footwear.'

12(b) Information about the eco-label
The following text (or equivalent text) shall appear on the packaging:
'For more information visit the EU Ecolabel website: http://www.ecolabel.eu'

12(c) Information to consumers
An information box in which the applicant explains its approach to environmental sustainability should be put on the packaging.

Assessment and verification: the applicant shall provide a picture of the product packaging, accompanying by information supplied with the product, together with a declaration of compliance with each part of this criterion.

Proposed criterion November 2014

(a) User Instructions
The following information (or equivalent text) shall be supplied with the product:

- Cleaning and care instruction following the specific product requirements.
- 'These shoes have been treated to improve their water resistance. They do not require further treatment' (This is applicable only to footwear that has been treated for water-resistance).
- 'Repair your footwear rather than throw them away. This is less damaging to the environment.'
- 'Please dispose of your footwear in appropriate local recycling facilities .'

Assessment and verification: the applicant shall provide a sample or an artwork of the user instructions that is supplied with the product.

(b) Information appearing on the eco-label
The optional label with text box shall contain the following text:
(i) More sustainable material origin (in case Criterion 1 applies)
(ii) Less polluting production processes
(iii) Minimized use of hazardous substances (tested against hazardous substances?)
(iv) Tested for durability
The guidelines for the use of the optional label with text box can be found in the "Guidelines for use of the Ecolabel logo" on the website:
http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf

Assessment and verification: the applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

AHWG1 Technical discussions
The objective of this criterion is to give the consumer valuable information on the product, its environmental impacts, and its proposed maintenance. In addition, EU Ecolabel Regulation No 66/2010 requires that "EU Ecolabel criteria shall include requirements intended to ensure that the products bearing the EU Ecolabel functions adequately in accordance with their intended use."

Some stakeholders have suggested providing more information to the consumers. Therefore, we suggest summarising the environmental impacts of the pair of footwear. The results shall be calculated by using the ISO 14040 protocol and be reviewed by a third party in order to be displayed.

Stakeholders have also highlighted that instructions should be given to the consumers on how to improve the footwear durability and how to manage their post-consumer footwear waste.

AHWG1 stakeholder feedback

According to the feedback received, manufacturers should not be permitted to display the environmental impact and it was suggested deleting the proposal, mainly because of the lack of a calculation standard of reference.

The intention to introduce defined text for consumer instruction in the criterion was doubted, as manufacturer should freely decide what appears on the packaging and then address what specific treatment would be required for the footwear lifetime extension, also considering that different shoes would require different specifications.

It was also proposed to revise the assessment and verification, and not to provide Competent Bodies with packaging samples. It was proposed to introduce only a lay-out inside the packaging, especially considering CE labelling requirements.

The information on the appropriate shoe care that could prolong its lifetime was suggested for inclusion, but in a more general manner, any other issue should not be considered.

Proposal

Following stakeholder feedback, it is proposed to introduce respective changes suggested by stakeholders and Competent Bodies:

1. The requirement to provide packaging sample was removed and replaced by requirement to provide picture of the packaging.
2. The instruction of the product care should be defined by manufacturer.

Questions

- Should further information be displayed on the product packaging

2.3.12 CRITERION 13: Information appearing on the eco-label

Present criterion, Decision 2009/563/EC
Box 2 of the eco-label shall contain the following text: — low air and water pollution, — harmful substances reduced. Assessment and verification: the applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.
Suggested criterion (1st AHWG)
Box 2 of the eco-label shall contain the following text: — low air and water pollution, — use of more eco-friendly materials for product and packaging, — low water ~~and energy~~ consumption, — waste generation reduced, — harmful substances ~~reduced~~ avoided, — improved work safety and social conditions, — extended lifetime. Assessment and verification: the applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.
Suggested criterion (1st AHWG)
(i) More sustainable material origin (in case Criterion 1 applies) (ii) Less polluting production processes (iii) Restrictions on hazardous substances (iv) Tested for durability

Assessment and verification: the applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.

AHWG1 technical discussions

The revised criterion should comply with EU Ecolabel Regulation No 66/2010 and the message should be improved. 'Harmful substances reduced' implies that they are still present and may be misleading. 'Restriction on hazardous substances" is more in line with the new Regulation.

In addition, the message should be aligned with the proposed revised and the new criteria areas, if applicable.

AHWG1 stakeholder feedback

Changing of the criterion wording was discussed. 'Extended lifetime' has been proposed instead of 'durable product'. ´Hazardous substances avoided´ might only be stated if these substances are not present. Furthermore, it was suggested to form the criteria first, and then to formulate statements.

Proposal

It is proposed to address the main environmental aspects referred by the revised proposal of EU Ecolabel criteria for footwear.

Questions

- Should additional information be provided?

AHWG2 stakeholder feedback and follow-up research

Here we present a summary of feedback received at the second ad-hoc working group meeting held in Brussels on the 14th May 2014, together with follow-up research and the resulting proposals for further revision of the proposed criteria.

AHWG2 stakeholder feedback

- Stating "more sustainable product origin" was perceived as contradictive if PVC is allowed to be used.
- It was proposed to replace "lower hazardous content" by "tested against harmful substances".

Follow up and proposals:

For the document clarity the Criterion 12 and 13 were merged and divided into sub-criteria. Wording was improved for the document clarity.

- The statement "more sustainable product origin" could be used when Criterion 1 applies.
- The statement "lower hazardous content" was replaced by "minimized use of hazardous substances" to reflect the general approach of EU Ecolabel to reduce the chemical risk.

3 WITHDRAWN CRITERIA

3.1 Use of recycled materials

Following the technical discussion and stakeholders' feedback it is proposed to withdrawn the criterion from the current revision process. The rationales are specified below.

Criterion proposal

(a) Use of recycled polyester in textile uppers and linings

Polyester fibres shall be manufactured using a minimum content of PET that has been recycled from pre-consumer and/or post-consumer waste. Staple fibres shall contain a minimum content of xx% and filament fibres xx%.

Assessment and verification: Recycled content shall be traceable back to the reprocessing of the feedstock. This shall be verified by independent third party certification of the chain of custody or by documentation provided by suppliers and processors.

(b) Use of recycled plastic in shoe soles

Shoe soles shall be manufactured using a minimum content of xx that has been recycled from pre-consumer and/or post-consumer waste.
Assessment and verification: Recycled content shall be traceable back to the sole manufacturer. This shall be verified by documentation provided by suppliers and processors.

AHWG1 technical discussions

(a) Use of recycled polyester in textiles uppers and linings

The Task 2 analysis revealed that several companies use recycled materials in their products, in particular polyester or nylon. Consumption of energy for synthetic fibre production was simultaneously identified as one of the key environmental issues to be addressed within the on-going revision process of the EU Ecolabel for the textile product group.

Production of polyester fibres accounts for about 40-45% of total global annual fibre production[239]. Recycled PET fibre accounted for approximately 8% of the world PET fibre production in 2007[240]. In Europe in 2011, 39% of all recovered European PET was used to produce polyester fibres[241]. Production of polyester has been identified as an energy and natural resources intensive process.

The full life cycle of 1 kg of polyester fabric is responsible for release of more than 30 kg CO2 equivalents to the atmosphere (around 20 kg are associated with 1 kg of cotton). Because no agricultural production is needed, the ecosystems impacts are lower than for cotton (IMPRO-Textiles, 2009). Depending on the allocation methods applied, when contrasted with virgin PET, recycled PET fibres offer 40–85% saving on non-renewable energy used (NREU), and a saving of 25–75% in global warming potential (GWP)[242]. Furthermore, according to the LCA findings, mechanical and semi-mechanical recycling show better environmental profiles than chemical recycling; however, chemically recycled fibres can be used in a wider range of applications.

[239] http://textileexchange.org

[240] Thiele U. 2009. In: 13th international polyester recycling symposium, pp 22–3.

[241] http://www.petcore-europe.org

[242] Shena, L., Worrellb, E., Martin K. Patela, M.K. 2010. Open-loop recycling: A LCA case study of PET bottle-to-fibre recycling. Resources, Conservation and Recycling 55, pp 34–52

Through Task 4 of the revision process, we know that use of recycled polyester will generate up to 4% improvement on the impacts of the footwear life cycle. This value depends on the impact category considered, the quantity of polyester used in the shoes, and the recycling allocation rules.

According to several sources (Silva, Edmir, 2011[243], Christopher Intagliata, 2012[244], IPTS, 2013[245], and ICISpricing, 2013), recycled polyester is cheaper than virgin polyester (by about 10 to 30 %). The price of virgin polyester is constantly rising with the price of petroleum. However, the demand for recycled polyester is greater than the supply, which sest a limit for this market and the possible growth of this eco-innovation[246].

(b) Use of recycled plastic in shoe soles

At present, conventional plastics and synthetic rubbers used in the shoe industry are almost entirely based on fossil raw materials. Overall production of plastics on the basis of crude oil consumption is approximately 260 million tons per year worldwide[247]. Some 500,000 tons of polyurethane (PUR) are used annually worldwide for shoe soles production[248].

Task 2 revealed that footwear that incorporates recycled synthetic materials are used on the market as suggested by stakeholders and found on the brand websites. Nevertheless, insufficient quantitative data are available to analyse the market penetration of such an initiative. There are several examples of brands that integrate recycled materials, e.g., recycled tires[249,250], into their shoe production, especially for soles. The economic benefits study of Simple Shoes that evaluated use of recycled tyres compared to natural rubber show 93% of cost decrease[251]. According to reRUBBER[252], 1 kg of recycled rubber can save 1 kg of CO2 compared to synthetic rubber. Recycled rubber os added in some rubber products, but usually 10% or less[253]. Nonetheless, the exact data on the total percentage of recycled plastics in footwear present on the European market is unknown. From this reason the evaluation of market share is not possible on the basis of official statistical data, and should be discussed further with stakeholders.

The most common applications for scrap tires use either whole or shredded tires or granulated rubber derived from tires. This is because the recovery of original raw materials from tires is expensive and involves an elaborate chemical process. The main end-markets for scrap tires are tire-derived fuel, civil engineering applications, ground rubber applications and cut, punched and stamped rubber products.

.

AHWG1 stakeholder feedback

Limited feedback was received concerning the introduction of this criterion. Generally, market share for possible shoe soles that contain material from pre-and post-consumer recycling was considered as niche.

It was furthermore stated that industry adapts internal recycling schemes in moulded

[243] http://www.academia.edu/1131358/RECYCLED_POLYESTER_LITERATURE_REVIEW
[244] http://www.livescience.com/32231-does-recycling-plastic-cost-more-than-making-it.html
[245] (End-of-Waste Criteria for Waste Plastic for Conversion - Technical Proposals, 2013)
[246] SETAC Europe 22nd Annual Meeting / SETAC 6th World Congress (2012) – Market-based allocation of recycling benefits
[247] Endres,H.J., Siebert-Raths,A. 2011. Engineering Biopolymers-Markets - Manufacturing, Properties and Applications, Carl Hanser Verlag, München, 2011.
[248] http://www.research.bayer.com/en/23-green-shoe.pdfx
[249] The rate of recycled rubber varies depending on the brands and is indicated in brackets
[250] http://recycledreused.wordpress.com/2011/04/19/top-5-recycled-shoe-companies/
[251] Cf. task 3 for more detailed on this LCA study
[252] http://www.rerubber.com/environmental-impact/
[253] M. P. Groover. 2002 Fundamentals of Modern Manufacturing 2/e.John Wiley & Sons, Inc., "

polyurethane footwear. Information were provided that shows that too high % w/w of residual material used in shoe soles might affect the quality of the product. This % will depend on the residual material used, type of footwear and its technical requirements.
Some companies stated that the only possibility to require obligatory use of recycling material would be to restrict the EU Ecolable for huge suppliers able to the close the loop of material flow.

Follow up research

The availability of footwear with declared recycled material content has been considered as niche. Laboratory data has been provided to JRC that shows that the recycled material content in the shoe soles could be included to a limited extend to maintain footwear quality, especially abrasion resistance will depend on the quantity and nature of residual material used. The need to comply with Art 6.6. of the EU Ecolabel Regulation 66/2010 was raised, especially when materials comes from post-consumer waste.

No specific data on the market share of footwear made of recycled material was provided to JRC, neither found in scientific information.

On the base of stakeholder feedback it should be clarified, that the proposed criteria set does not exclude the use of recycled material, as long as the final product complies with the criteria requirements. In fact, after the cross check of market availability, the use of recycled wood and cork is covered by the criteria.

Proposal

Due to the lack of relevant data to build up the proposal combined with additional constrains of possible verification procedure, it is proposed to withdrawn the criterion from the on-going revision. The application of the criterion is considered as addressed by the relatively low market share.

3.2 PVC usage

EU Ecolabel should be material and technology independent. PVC is not classified, its environmental performance needs to be addressed through the Restricted Substance List (Criterion 7).

Proposed criterion

(b) The footwear shall not contain PVC.

Assessment and verification: the applicant shall provide a declaration of compliance with this criterion.

AHWG1 technical discussions

Analysis of PVC usage as a footwear component has been suggested by the Commission Statement 2009/ ENV G2 the EU Ecolabel which supported the Commission Decision 2009/563/EC establishing the EU Ecolabel criteria for footwear. The evidence found indicated that PVC may cause environmental problems, especially considering possible risk to hazardous exposure during product life cycle[254], since it requires hazardous chemicals in production, releases harmful additives and creates potentially toxic wastes. If the end of life treatment is not managed correctly, significant impacts can arise from this life cycle phase, especially if the footwear is exported to or reused in non-European countries where the end of life is not controlled.

Several environmental and consumer NGOs have been advocating phasing out of PVC in consumer goods. Following the World Health Organization precautionary principle, whenever a potentially hazardous chemical is identified if a clearly safer alternative exists, the reasons to accept even a small, highly uncertain risk, should be questioned[255]. From the EU Ecolabel criteria setting perspective, when consulting other European Ecolabel relevant for the product group under revision, both Blue Angel and Nordic Swan restrict PVC usage. Japanese Eco-Mark forbids the use of halogenated compounds, Recognizing the feasibility of existent alternatives, many brands are on the way to becoming PVC-free; this approach has been adopted by Nike, Esprit, Adidas, Puma, and Timberland, among others. The alternatives are increasingly well known and well developed, and in many cases are already cost-competitive with PVC[256]. Therefore, it is undesirable to ecolabel products to contain PVC (including membranes and coatings).

The restriction on PVC usage in EU Ecolabelled footwear should be discussed further during the AdHoc Working Group Meeting.

AHWG1 stakeholder feedback

Discussion on the PVC content within EU Ecolabel criteria development for footwear and questions on material safety re-evaluation was perceived by one stakeholder as affecting EU Ecolabel credibility. It was stated that PVC was not classified as a hazardous material. Additionally the use of PVC in footwear was assessed as of low relevance from the market share perspective. The approach to phase up PVC was summarised as not-science based.

From the other side, the large number of stakeholders strongly supported the criterion proposal

[254] Huisingh, D (Editor-in Chief). 2011. Special Issue. Improving the health of the public, workers and the environment. Twenty years of toxic use reduction. Journal of Cleaner Production,. Volume 19/5, March 2011. 572 pp. Elsevier

[255] Marco Martuzzi, M., Tickner, J.A. (Eds).2004. The precautionary principle: protecting public health, the environment and the future of our children. World Health Organization. Europe.

[256] Delilah Lithner, D., Larsson, A., Dave, G. 2011. Environmental and health hazard ranking and assessment of plastic polymers based on chemical composition. Science of the Total Environment 409 , pp 3309–3324

to exclude PVC, stating that changes in the way to address PVC content in the EU Ecolabel criteria for footwear reflects the actual state-of thinking, and industry best practices. PVC exclusion was perceived as one of the elements towards increase of the label credibility.

The possible risk that arise from PVC manufacturing, transport and end-of-life phase were expressed.

All in all, it was clarified that according to the previous agreement on the EUEB level, the EU Ecolabel should not discriminate any materials, but rather should concentrate on the improvement of their environmental performance.

Follow-up research

Notwithstanding strong support to introduce the criterion that restricts the use of PVC, the EU Ecolabel should be material and technology independent. PVC is not classified; its environmental performance should be however addressed, mainly through the Restricted Substance List. Consequently, some stakeholders proposed to require obligatory test analysis of the possible presence of vinyl monomer in the final product.

Proposal

It is suggested to delete this criterion thus respect the previous agreement on the EUEB level considering that PVC as the material is not classified with any hazardous statement.

3.3 Post-consumer wastes

The proposal was perceived as not possible to be controlled by footwear manufacturer. It is therefore proposed to withdrawn the criterion from the current revision process

Criterion proposal

If any, the applicant shall provide information on the post-consumer wastes management policies and procedures and/or a waste management programme.
Assessment and verification: The applicant shall provide documentation that describes the waste management policies, procedures and programmes; and

AHWG1 technical discussions

It is estimated that the amount of waste arising from post-consumer shoes could reach 1.2[257]-1.5[258] million tonnes per year. Less than 5% of global footwear production has been estimated to be recycled or reused, with most being disposed of in landfill sites[259,260]. One of the primary reasons for the low reuse/recycling rate is that most modern footwear products contain a complex mixture of leather, rubber, textile, polymers and metallic materials that makes it difficult to perform complete separation and reclamation of material streams in an economically sustainable manner. Many brands have promoted eco-innovations in order to improve the end of life of footwear (see Task 2 of the Preliminary Report). However, it is difficult to assess the potential improvement related to these because there are insufficient data regarding:

[257] Michael James Lee, M.J., Rahimifard, S. 2012. An air-based automated material recycling system for postconsumer footwear products. Resources, Conservation and Recycling 69, pp 90– 99

[258] http://www.eco-naturalista.eu

[259] World Footwear. The future of polyurethane soling, world footwear. Cambridge, MA: Shoe Trades; 2005. p. 18–20.

[260] SATRA. Footwear market predictions: forecasts for global footwear trading to 2009. Kettering: SATRA Technology Centre; 2003.

- The streams statistics,
- The processes of recycling,
- The substituted products.

Although there are many initiatives for the management of post-consumers wastes, it appears complicated to set one common quantitative criterion because it would have to be very specific to each brand and system. Therefore, the proposal is to address this issue by introducing specific information for the consumer indicating that footwear should be dispose according to the adopted segregation system (usually used apparel bins).

AHWG1 stakeholder feedback

The difficulties in post-consumer shoes recollection and controlling of its possible recycling were raised. Information to the end-consumer was perceived as more appropriate. Another stakeholder shared the information on several approaches that use grinded footwear for sport area construction or take-back schemes supported by symbolic financial compensation.

The criterion was perceived as very difficult to implement, being more a question for the future rather than analysis of the current state-of-the-art. Footwear biodegradability was also mentioned. JRC clarified that the market share for biodegradable footwear was still negligible.

It was suggested to add a sentence on the product labelling in order to encourage the consumers to dispose their shoes appropriately. Generally, stakeholders agreed on this first qualitative criterion as a good start to improve this aspect in the future revision.

Follow up research:

Very limited feedback was received on this proposal. The sentence on the product labelling in order to encourage the consumers to dispose their shoes appropriately is introduced criterion 10.

Proposal

The proposal is to withdrawn the criterion considering the lack of mechanism that would allow applicant to influence user behaviour or provide its corresponding verification.

4 ANNEXES

ANNEX I BAT consumption and emissions levels (hides, skins, textiles, and polymers)

Table 22: BAT water consumption levels – Raw hide[261]

Process stages	Water consumption per tonne of raw hide[262] (m^3/t)	
	Unsalted hides	Salted hides
Raw to wet blue/white	10 to 15	13 to 18
Post-tanning processes and finishing	6 to 10	6 to 10
Total	16 to 25	19 to 28

Table 23: BAT water consumption levels – Skin[261]

Processes stages	Specific water consumption[263] (litres/skin)
Raw to pickle	65 to 80
Pickle to wet blue	30 to 55
Post-tanning processes and finishing	15 to 45
Total	110 to 180

Table 24: BAT water consumption levels – Textiles processing[264]

Process stages	Water consumption
finishing of yarn	70 - 120 l/kg
finishing of knitted fabric	70 - 120 l/kg
pigment printing of knitted fabric	0.5 - 3 l/kg
finishing of woven fabric consisting mainly of cellulosic fibres	50 - 100 l/kg
finishing of woven fabric consisting mainly of cellulosic fibres (including vat and/or reactive printing)	_ <200 l/kg
finishing of woven fabric consisting mainly of wool	<200 l/kg
_ finishing of woven fabric consisting mainly of wool (for processes that require high liquor ratio)	<250 l/kg

[261] Source: BREF on Tanning of Hides and Skins

[262] Monthly average values. Processing of calfskins and vegetable tanning may require a higher water consumption.

[263] Monthly average values. Wool-on sheepskins may require a higher water consumption

[264] BREF for Textiles Industry

Table 25: BAT emissions levels - (BREF Polymers, 2007)

	VOC (g/t)	Dust (g/t)	COD (g/t)	Suspended solids (g/t)	Direct energy (GJ/t)	Hazardous waste (kg/t)
LDPE	New: 700 - 1100 Existing: 1100 - 2100	17	19-30		Tube: 2.88 – 3.24* Autoclave: 3.24 – 3.60	1.8-3.0
LDPE copolymers	2000	20			4.5	5.0
HDPE	New: 300 - 500 Existing: 500 - 1800	56	17		New: 2.05 Existing: 2.05 – 2.52	3.1
LLDPE	New: 200 - 500 Existing: 500 - 700	11	39		New: 2.08 Existing: 2.08 – 2.45	0.8
GPPS	85	20	30	10	1.08	0.5
HIPS	85	20	30	10	1.48	0.5
EPS	450-700	30			1.80	3.0
S-PVC	VCM: 18 - 45 Splitview: 18 - 72	10-40	50-480	10**		0.01-0.055
E-PVC	100 - 500 Splitview: 160 - 700	50-200	50-480	10**		0.025-0.075
UP	40-100	5-30			2-3.5	7
ESBR	170-370		150-200			

*Excludes a potential positive credit of 0 to 0.72 GJ/t for low pressure steam (depending on export possibilities
for low pressure steam)
'New' and 'existing' refers to new or existing installations.
** Alternatively, 1 – 12 g/t AOX are achieved for PVC production sites or combined sites with PVC production

	S to air (kg/t)	$SO4^{2-}$ to water (kg/t)	COD (g/t)	Zn to water (g/t)	Direct energy (GJ/t)	Hazardous waste (kg/t)
Viscose staple fibres	12-20	200-300	3000-5000	10-50	20-30	0.2-2.0

ANNEX III Energy consumption calculation

The energy consumption calculation refers only to the assembly (manufacturing stage) of the final product.

The average electric consumption (AEC) for each pair of shoes can be calculated two ways:

On the basis of the overall daily production of shoes of the plant:

— MJdp = average energy used per day in production of shoes [electricity + fossil fuels] (calculated on an annual basis),

— N = average number of pair of shoes produced per day (calculated on a annual basis),

$$AEC = MJdp / N$$

On the basis of the production of eco-labelled shoes of the plant:

— MJep = average energy used per day in production of eco-labelled shoes [electricity + fossil fuels] (calculated on an annual basis),

— Nep = average number of pairs of eco-labelled shoes produced per day (calculated on an annual basis),

$$AEC = MJep/Nep$$

ANNEX IV Derogation request form

EU Ecolabel revision

Derogation request		Substitution proposal	
Chemical substance name(s)		**Chemical substance name(s)**	
CAS, EC or Annex VI numbers		**CAS, EC or Annex VI numbers**	
Functional need and significance in the final product		**Functional need and significance in the final product**	
CLP Classifications from EU Ecolabel listing	*Please note if they are self-classified or have a harmonised classification*	**CLP Classifications from EU Ecolabel listing**	*Please note if they are self-classified or have a harmonised classification*
Current regulatory status	*E.g. on or proposed for the SVHC candidate list, registered, restricted*	**Current regulatory status**	*E.g. on or proposed for the SVHC candidate list, registered, restricted*
Existing scientific evidence and risk assessments relating to the substance	*E.g. REACH/ECHA dossiers, reference to scientific research*	**Indication and comparison of environmental performance**	*- Identification of classification/non-classification status of the substance* *- identification of substances that can/have been substituted and supporting evidence of the improvement for specific hazards i.e. CLP classification, reference to scientific research/screening exercises*
The relevance of hazard classifications along the life cycle of the product *e.g.* manufacturing, use, disposal	*E.g. if the CLP classification and greatest risk of exposure relates to the form in which a substance is handled in the factory*	**The life cycle relevance of environmental improvements**	*Quantitative evidence of where the greatest improvement potential can be evidenced e.g. workforce exposure, wastewater, consumer exposure risk*
Typical concentration in the final product or specific components and articles (including ranges depending on function)		**Typical concentration in the final product or specific components and articles (including ranges depending on function)**	
Proportional contribution to final product classification (where relevant)	*Particularly relevant for mixtures and with reference to CLP rules*	**Proportional contribution to final product classification (where relevant)**	*Particularly relevant for mixtures and with reference to CLP rules*
Technical assessment of the functional need	*The necessity to be present in the product and according to its end-use or consumer requirements*	**Compliance with product performance and functional requirements**	*Evidence that the substitute fulfills the same requirements and technical needs, mechanisms used e.g. fitness for use test results, specifications*
Market availability of alternatives, their hazard profile and the potential for substitution	*Market availability and technical status of alternatives – why are they currently not suitable?*	**Market availability, production volumes and other potential substitutes**	*E.g. Market diffusion and technical status of substitute(s)*
Additional information		**Additional information**	

ANNEX V Feedback from stakeholders

Stakeholders have been surveyed on several issues (scope, market, criteria revision…) through a questionnaire. Their feedback regarding the criteria revision is summarized here. The questionnaire is presented in Annex.

[font change] As general feedback, the following points were extracted from the stakeholders' consultation:

- Product group definition

  Most stakeholders find the current definition of the product group adequate and precise. The wording "fixed outer soles" should be specified because a priori it excludes footwear molded as one piece.

- Scope extension

  More than half the stakeholders (~57 %) are clearly not in favour of the scope extension. In general terms, stakeholders who supported the scope extension expressed their interest to cover more leather products within the EU Ecolabel in order to promote a greener market. Simultaneously, they suggested the need for fair requirements among all leather goods. Some stakeholders, because of several constraints, do not clearly express their interest in covering footwear and other leather products within one common scope. However, they would be interested in covering other leather products within the EU Ecolabel scheme. In practice, specific criteria for other leather products (or leather) could be developed instead of including them in one unique product group 'Footwear and leather products'.

- Suggestions for criteria revision

  Among the different suggestions posed by stakeholders for consideration in the criteria revision process, the following ones were highlighted as being highly relevant:

  - Focus on materials other than leather, e.g., plastics, textiles, metals;
  - Inclusion of recycled materials;
  - Updating the assessment and verification methods.

Regarding the general feedback for each criterion, the majority of stakeholders prefer not to introduce any change. However, stakeholders highlighted some potential improvements for almost all criteria; each stakeholder highlighted two or three different criteria. Criterion 2 and 3 raised particular concern.

1.	Dangerous substances in the final product*	Shall be reviewed (see Article 6.6. and 6.7. of the EU Ecolabel Regulation EC/66/2010)		
2.	Reduction of water consumption	**10** Keep	**4** Modify	**4** Remove
3.	Emission from the production of material (Limitation of water pollution)	**12** Keep	**4** Modify	**3** Remove
4.	Exclusion of use hazardous substances (up until purchase)*	Shall be reviewed (see Article 6.6. and 6.7. of the EU Ecolabel Regulation EC/66/2010)		
5.	Use of VOCs during final assembly of shoes	**13** Keep	**2** Modify	**2** Remove
6.	Energy Consumption	**12** Keep	**2** Modify	**3** Remove
7.	Use of recycled material for packaging	**15** Keep	**0** Modify	**2** Remove
8.	Information on the packaging	**14** Keep	**2** Modify	**0** Remove
9.	Information appearing on the eco-label	**13** Keep	**4** Modify	**0** Remove

10. Parameters contributing to durability	**13** Keep	**3** Modify	**0** Remove
The reasons why the stakeholders want to modify or remove some criteria are detailed below. As a general comment, more recent limits could be taken from the latest BREF document.			
1. Dangerous substances in the final product*	Each type of material should be addressed differently with a specific method. Plastics should be more explicitly mentioned.		
2. Reduction of water consumption	Water consumption is very difficult to monitor or it is difficult to obtain the documentation from the leather producer. One stakeholder suggests using the WFN (Water Footprint Network)[265] method. Water consumption highly depends on the type of leather and the tanning process.		
3. Emission from the production of material (Limitation of water pollution)	Water emissions requirements are not up to date. It does not consider the type of wastewater treatment plant (small, large…) nor the load. One stakeholder refers to BATNEEC standard. In addition, it is very difficult to get the documentation from the leather producer. The limits depend on the country of production.		
4. Exclusion of use hazardous substances (up until purchase)*	Stakeholders highlight PFC and the chromium as hazardous substances.		
5. Use of VOCs during final assembly of shoes	The EU Ecolabel should motivate shifting to water-based adhesives and treatments. The regulation on VOC emissions requires levels already difficult to deal with.		
6. Energy Consumption	Modifying: Absolute energy consumption is not equitable for big and small manufacturers. This efficiency should be the focus of additional discussions and analysis. Removing: Energy consumption for shoe assembly does not seem to be significantly energy consuming. However, energy consumption could focus on tanning and on the production of other materials such as natural rubber. In addition, there is already a regulation with energy consumption limits that arel difficult to deal with.		
7. Use of recycled material for packaging	**The manufacturers do commonly achieve this by themselves.**		
8. Information on the packaging	The messages should be better and more detailed.		
9. Information appearing on the eco-label	The new criterion must comply with EU Ecolabel Regulation No 66/2010 and the message should be better (for example, 'Harmful substances reduced' implies that these sustances are still present and may be misleading. 'Free from restricted substances' would be better).		
10. Parameters contributing to durability	The criteria do not consider different aspects of footwear: how the end-consumer treats the product, the different types of footwear (e.g., safety), and the fashion which lowers the durability. In addition, messages should inform the consumer about the right treatments to make his product durable.		

Additional considerations from stakeholders are presented below.

Additional aspects and criteria area suggested for consideration

Around half of the stakeholders (~55%) suggested additional aspects or criteria areas to be considered within the EU Ecolabel revision process:

- The use of recycled materials (in particular outsoles);
- LCA concepts (such as CO2 emissions);
- Transparency on logistics and transport over the whole value chain ;
- Recyclability of the end product' parts and information on proper end of life disposal (especially if the product was designed specifically);

[265] http://www.waterfootprint.org/?page=files/WFN-mission

- Address the environmental impacts of synthetic materials, textiles, and metals on par with leather (fairness between the different materials).

Water consumption limit

Most stakeholders (~75%) stated that it would be feasible to set up limits for water consumption for materials or production stages other than leather. It was also stressed that the current criteria are too concentrated on leather and not enough on other materials.

Waste management system

Most stakeholders (~70%) including industries, expressed the feasibility of introducing the requirement on waste management system: It could be based on LCA.

- It would be possible to establish requirements on the waste management system at the production stage, but not for the product end of life;
- A circular economy could be promoted (re-use of waste as material or energy);
- It could be based on the efficiency (a percentage of the production).

Several stakeholders stated that a waste management system is not a quantitative indicator of the environmental performance of the product, because it is somewhat subjective. Therefore, the EU Ecolabel criteria should remain clear and straightforward.

In general, stakeholders are in favor of keeping the assessment and verification methods. However, some stakeholders highlight the need to modify the current assessment and verification methods. Criteria 3, 4, and 1 resulted to be the most highlighted, as indicated in the table below.
In general, stakeholders think that assessment and verification methods should be updated. One stakeholder stresses that the methods should be easier to interpret and more straightforward because the applicant is not always the manufacturer (who makes many declarations).

Here are the answers of stakeholders:

How in your opinion should the criteria assessment and verification methods evolve:

*Note: the Criterion 1 and 4 will be analysed jointly.

1.	Dangerous substances in the final product*	**8** Keep	**5** Modify
2.	Reduction of water consumption	**8** Keep	**5** Modify
3.	Emission from the production of material (Limitation of water pollution)	**6** Keep	**6** Modify
4.	Exclusion of the use hazardous substances (up until purchase)*	**7** Keep	**5** Modify
5.	Use of VOCs during final assembly of shoes	**10** Keep	**3** Modify
6.	Energy Consumption	**9** Keep	**4** Modify
7.	Use of recycled material for packaging	**11** Keep	**2** Modify
8.	Information on the packaging	**13** Keep	**0** Modify
9.	Information appearing on the eco-label	**13** Keep	**0** Modify
10.	Parameters contributing to durability	**10** Keep	**3** Modify

1.	Dangerous substances in the final product*	The Criterion 1 will be analysed in accordance with Commission Statement (19/03/2009/ENV G2. New detection limits exist. Metal parts need other standards.
2.	Reduction of water consumption	Need to establish benchmarks and methods for assessing water usage per pair of shoes.
3.	Emission from the production of material (Limitation of water pollution)	- Alternatives to ISO 6060 should be mentioned, directly in connection to the criterion. For some global areas, other valid standards are used. - These are difficult to address when there are extended supply chains. Alignment towards LWG methodology might be appropriate

4. Exclusion of use hazardous substances (up until purchase)*	- the Criterion 1 will be analysed in accordance with Commission Statement (19/03/2009/ENV G2) - Documents supporting the non-use (or similar) should be compulsory
5. Use of VOCs during final assembly of shoes	Definition of VOC is needed (and is disputed for some areas). Verification is very hard to comprehend.
6. Energy Consumption	
7. Use of recycled material for packaging	.
8. Information on the packaging	
9. Information appearing on the eco-label	
10. Parameters contributing to durability	The sole flexing method is not applicable for small soles and a better method would probably be EN ISO16177 with the performance criteria of no cracking following 50,000 flexes on a 90mm roller. Regarding the colour fastness criterion, the test method EN ISO 17700 has three different methods of exam (A, B and C) and it should be clarified which one is to be used (method A is the most widely applied method in Europe). The suitable test conditions (dry, wet, sweat, etc) may be discussed during the coming revision meetings in order to find an agreement.

ANNEX VI Draft proposal: RSL

Appendix I

Footwear Restricted Substance List (RSL)

The EU Ecolabel RSL consists of restrictions that apply to the production stages in the footwear supply chain and to the final product, as specified:

(a) Wet processing
(b) Dye houses
(c) Printing processes
(d) Finishing processes
(e) All production stages
(f) The final product

Restrictions applying to all production stages

1. The following restrictions are proposed to be applied to specified production stages

Applicability/ substance group	Scope of restriction	*Limit values*	*Verification*
(a) Surfactants, softeners and complexing agents			
Wet processes	(i) At least 95% by weight of softeners, complexing agents and surfactants shall be: – readily biodegradable under aerobic conditions or – inherently biodegradable and/or – eliminable in wastewater treatment plants. Non-ionic and cationic surfactants: All non-ionic and cationic surfactants shall also be readily biodegradable under anaerobic conditions. The latest revision of the Detergents Ingredients Database should be used as a reference point for biodegradability:http://ec.europa.eu/environment/ecolabel/documents/did_list/didlist_part_a_en.pdf	*n/a*	*Assessment and verification: the applicant shall provide declaration of compliance from chemical supplier supported by the respective documentation (for ingredients included in Detergents Ingredients Database), otherwise results of appropriate OECD or ISO tests for:* – *Readily biodegradability (OECD 301 A, ISO 7827, OECD 301 B, ISO 9439, OECD 301 C, OECD 301 D, ISO 10708, OECD 301 E, OECD 301 F, ISO 9408)* – *Inherently biodegradability (ISO 14593, OECD 302 A, ISO 9887, OECD 302 B, ISO 9888, OECD 302 C)* – *Eliminability (OECD 303A/B, ISO 11733)* *For non-ionic and cationic surfactants, this shall be supported by results of appropriate OECD or ISO tests (ISO 11734, ECETOC No 28 (June 1988), OECD 311).*
(b)Auxiliaries			
Leather and textile processing	The following substances shall not be used in any textile or leather preparations or formulations and are subject to limit values for the presence of substances on the final product: Nonylphenol, mixed isomers 25154-52-3 4-Nonylphenol 104-40-5 4-Nonylphenol, branched 84852-15-3 Octylphenol 27193-28-8 4-Octylphenol 1806-26-4 4-tert-Octylphenol 140-66-9 Alkylphenolethoxylates (APEOs) and their derivatives: Polyoxyethylated octyl phenol 9002-93-1 Polyoxyethylated nonyl phenol 9016-45-9 Polyoxyethylated p-nonyl phenol 26027-38-3	*25 mg/kg sum total or below the detection limit*	*Assessment and verification: the applicant shall provide the test results of the final product. Test method: Leather: ISO/DIS 18218-2 (Indirect method). Textile: ISO/DIS 18254*
Leather and textile processing	The following substances shall not be used in any textile or leather preparations or formulations along the supply chain: Bis(hydrogenated tallow alkyl) dimethyl ammonium chloride (DTDMAC) Distearyl dimethyl ammonium chloride (DSDMAC) Di(hardened tallow) dimethyl ammonium chloride (DHTDMAC) Ethylene diamine tetra acetate (EDTA), Diethylene triamine penta acetate (DTPA) 4-(1,1,3,3-tetramethylbutyl)phenol	*n/a*	*Assessment and verification: the applicant and/or material supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*

Applicability/ substance group	Scope of restriction	*Limit values*	*Verification*
	1-Methyl-2-pyrrolidone Nitrilotriacetic acid (NTA)		
(c) Colophony			
Printing, inks, varnishes and adhesives.	Colophony shall not be used as an ingredient in printing inks, varnishes and adhesives.	*n/a*	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*
(d) Solvents			
Auxiliaries used in preparations, formulations and adhesives. Intermediate materials and final product.	The following substances shall not be used in any preparations or formulations during footwear production or any part of the final product - 2-Methoxyethanol - N,N-dimethylformamide - Bis(2-methoxyethyl) ether - 4,4'- Diaminodiphenylmethane - 1,2,3-trichloropropane - 1,2-Dichloroethane; ethylene dichloride - 2-Ethoxyethanol - Benzene-1,4-diamine dihydochloride - Bis(2-methoxyethyl) ether - Formamide - N,N-dimethylacetamide (DMAC) - N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone - Trichloroethylene	*n/a*	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance stage supported by Safety Data Sheet.*
(e) Chloralkanes			
Leather, synthetic rubber, coatings	C10-C13 chloralkanes shall not be used in the production of leather, rubber or textile components.	*n/a*	*Assessment and verification: the applicant and/or his supplier(s) shall provide a declaration that C10-C13 chloralkanes have not been used supported by Safety data Sheet.*
Leather, synthetic rubber, coatings	The use of C14-C17 chloralkanes shall be restricted in the production of leather, rubber or textile components.	*100 mg/kg*	*Assessment and verification: the applicant and/or his supplier(s) shall provide a declaration of compliance supported by the results of a test report according to EN ISO DIS 18219.*
(f) Biocides			
Used during transportation or storage of raw, semi-finished materials, or final product packaging.	(i) Only active substances included in Annex IA of the Directive 98/8/EC of the European Parliament and of the Council, and Biocide Regulation (EC) No 528/2012 shall be allowed. Applicants should consult the most current authorisation list: http://ec.europa.eu/environment/biocides/annexi_and_ia.htm Biocides shall not be incorporated into final product or any part thereof during the footwear production process in order to impart biocidal properties.	*n/a*	*Assessment and verification: the applicant shall provide either declarations of non-use prior to transportation and storage, or evidence that the use of biocides is authorised under Annex IA of the Directive 98/8/EC of the European Parliament, or Regulation (EC) No 528/2012.* *If used, a list of biocidal products added during transportation or storage of raw, semi-finished materials or to final product packaging shall be provided, including related H statements / R phrase.*
	(ii). Chlorophenols (their salts and esters),	*Not*	*Assessment and verification: the*

Applicability/ substance group	Scope of restriction	*Limit values*	*Verification*
	organo-tin compounds (including TBT, TPhT, DBT and DOT) diemthyl fumarate (DMFu), triclosan, and nanosilver shall not be used during the transportation or storage of the product, any article of it and any homogeneous part of it and shall not be incorporated into the final product and product packaging.	*detectable*	*applicant and/or his supplier(s) shall provide a declaration of non-use. The declaration shall be supported by the results of final product testing for the presence of following substances:* *Chlorophenols: Leather, EN ISO 17070; Textile, XP G 08-015 (Detection limits: Leather: 0,1 ppm; Textile: 0,05 ppm),* *Dimethyl fumarate: ISO/TS 16186*
(g) Other specific substances			
preparations, formulations, adhesives, final product and any part thereof.	Specific listed substances shall not be intentionally added into preparations, formulations, adhesives, final product and any part thereof. - Chlorinated or brominated dioxines or furans - Chlorinated hydrocarbons (1,1,2,2-Tetrachloroethane, Pentachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethylene) - Hexachlorocyclohexane - Monomethyldibromo–Diphenylmethane - Monomethyldichloro-Diphenylmethane - Nitrites - Polybrominated Biphenyls (PBB) - Pentabromodiphenyl Ether (PeBDE)) - Octabromodiphenyl Ether (OBDE) - Polychlorinated Biphenyls (PCB) - Polychlorinated Terphenyls (PCT)) - Tri-(2,3-dibromo-propyl)-phosphate (TRIS) - Trimethylphosphate - Tris-(aziridinyl)-phosphinoxide (TEPA) - Tris(2-chloroethyl)-phosphate (TCEP)) - Dimethyl methylphosphonate (DMMP))	*n/a*	*Assessment and verification: The applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*

2. The following restrictions are proposed to apply to dye house, dyes and pigments, and printing process.

Applicability/ substance group	Scope of restriction	Limit values	Verification
(a) Carriers			
i. Carriers used in dying process	Where disperse dyes are used, halogenated dyeing accelerants (carriers) shall not be used (Examples of carriers include: 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, chlorophenoxyethanol).	n/a	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*
i. Carriers	Halogenated organic compounds shall not be	n/a	*Assessment and verification: the*

<table>
<tr><td>used as blowing agents for plastics foams</td><td>used as blowing agents or as auxiliary blowing agents.</td><td></td><td>applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.</td></tr>
<tr><td colspan="2">(b) Restricted dyes</td><td></td><td></td></tr>
<tr><td>ii. Azo dyes and azo colourants
Application in dying process of all materials</td><td>Below listed azo dyes and azo colourants that may cleave to aromatic amines that are known to be carcinogenic shall not be used.

<table>
<tr><th>Arylamine</th></tr>
<tr><td>4-aminodiphenyl</td></tr>
<tr><td>Benzidine</td></tr>
<tr><td>4-chloro-o-toluidine</td></tr>
<tr><td>2-naphtylamine</td></tr>
<tr><td>o-amino-azotoluene</td></tr>
<tr><td>2-amino-4-nitrotoluene</td></tr>
<tr><td>p-chloroaniline</td></tr>
<tr><td>2,4-diaminoanisol</td></tr>
<tr><td>4,4′-diaminodiphenylmethane</td></tr>
<tr><td>3,3′-dichlorobenzidine</td></tr>
<tr><td>3,3′-dimethoxybenzidine</td></tr>
<tr><td>3,3′-dimethylbenzidine</td></tr>
<tr><td>3,3′-dimethyl-4,4′-diaminodiphenylmethane</td></tr>
<tr><td>p-cresidine</td></tr>
<tr><td>4,4'-methylene-bis-(2-chloroaniline)</td></tr>
<tr><td>4,4′-oxydianiline</td></tr>
<tr><td>4,4′-thiodianiline</td></tr>
<tr><td>o-toluidine</td></tr>
<tr><td>2,4-diaminotoluene</td></tr>
<tr><td>2,4,5-trimethylaniline</td></tr>
<tr><td>o-anisidine (2-Methoxyanilin)</td></tr>
<tr><td>2,4-Xylidine</td></tr>
<tr><td>2,6-Xylidine</td></tr>
<tr><td>4-aminoazobenzene</td></tr>
</table>

An indicative list of azodyes that may cleave to arylamines is provided in the following.
<table>
<tr><th colspan="2">Disperse dyes that may cleave to aromatic an</th></tr>
<tr><td>Disperse Orange 60</td><td>Disperse Yellow</td></tr>
<tr><td>Disperse Orange 149</td><td>Disperse Yellow</td></tr>
<tr><td>Disperse Red 151</td><td>Disperse Yellow</td></tr>
<tr><td>Disperse Red 221</td><td>Disperse Yellow</td></tr>
</table>

<table>
<tr><th colspan="2">Basic dyes that may cleave to aromatic amine</th></tr>
<tr><td>Basic Brown 4</td><td>Basic Red 114</td></tr>
<tr><td>Basic Red 42</td><td>Basic Yellow 82</td></tr>
<tr><td>Basic Red 76</td><td>Basic Yellow 103</td></tr>
<tr><td>Basic Red 111</td><td></td></tr>
</table>

<table>
<tr><th colspan="2">Acid dyes that may cleave to aromatic amines</th></tr>
<tr><td>CI Acid Black 29</td><td>CI Acid Red 24</td></tr>
<tr><td>CI Acid Black 94</td><td>CI Acid Red 26</td></tr>
<tr><td>CI Acid Black 131</td><td>CI Acid Red 26:1</td></tr>
<tr><td>CI Acid Black 132</td><td>CI Acid Red 26:2</td></tr>
<tr><td>CI Acid Black 209</td><td>CI Acid Red 35</td></tr>
<tr><td>CI Acid Black 232</td><td>CI Acid Red 48</td></tr>
<tr><td>CI Acid Brown 415</td><td>CI Acid Red 73</td></tr>
</table></td><td>30 mg/kg for each arylamine in the final product</td><td>Assessment and verification: the applicant shall provide results of specific testing according to EN 14362-1:2012 and 3:2012 for textile, and CEN ISO/TS 17234-1 and 2 for leather.
<u>(Note:</u> false positives may be possible with respect to the presence of 4-aminoazobenzene, and confirmation is therefore recommended).</td></tr>
</table>

	CI Acid Orange 17	CI Acid Red 85	CI Acid Red 167
	CI Acid Orange 24	CI Acid Red 104	CI Acid Red 170
	CI Acid Orange 45	CI Acid Red 114	CI Acid Red 264
	CI Acid Red 4	CI Acid Red 115	CI Acid Red 265
	CI Acid Red 5	CI Acid Red 116	CI Acid Red 420
	CI Acid Red 8	CI Acid Red 119:1	CI Acid Violet 12

Direct dyes that may cleave to aromatic amin	
Direct Black 4	Basic Brown 4
Direct Black 29	Direct Brown 6
Direct Black 38	Direct Brown 25
Direct Black 154	Direct Brown 27
Direct Blue 1	Direct Brown 31
Direct Blue 2	Direct Brown 33
Direct Blue 3	Direct Brown 51
Direct Blue 6	Direct Brown 59
Direct Blue 8	Direct Brown 74
Direct Blue 9	Direct Brown 79
Direct Blue 10	Direct Brown 95
Direct Blue 14	Direct Brown 101
Direct Blue 15	Direct Brown 154
Direct Blue 21	Direct Brown 222
Direct Blue 22	Direct Brown 223
Direct Blue 25	Direct Green 1
Direct Blue 35	Direct Green 6
Direct Blue 76	Direct Green 8
Direct Blue 116	Direct Green 8.1
Direct Blue 151	Direct Green 85
Direct Blue 160	Direct Orange 1
Direct Blue 173	Direct Orange 6
Direct Blue 192	Direct Orange 7
Direct Blue 201	Direct Orange 8
Direct Blue 215	Direct Orange 10
Direct Blue 295	Direct Orange 108
Direct Blue 306	Direct Red 1
Direct Brown 1	Direct Red 2
Direct Brown 1:2	Direct Red 7
Direct Brown 2	Direct Red 10

iii. CMR dyes	Dyes that are carcinogenic, mutagenic or toxic to reproduction shall not be used.	n/a	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*
iv. Potentially sensitising	Dyes that are potentially sensitising shall not be used.	n/a	*Assessment and verification: the applicant and/or his supplier(s)*

Dyes that are carcinogenic, mutagenic or toxic to reproduction	CAS number
C.I. Acid Red 26	3761-53-3
C.I. Basic Red 9	569-61-9
C.I. Basic Violet 14	632-99-5
C.I. Direct Black 38	1937-37-7
C.I. Direct Blue 6	2602-46-2
C.I. Direct Red 28	573-58-0
C.I. Disperse Blue 1	2475-45-8
C.I. Disperse Orange 11	82-28-0
C.I. Disperse Yellow 3	2832-40-8

dyes	Disperse dyes that are potentially sensitising		CAS number
	C.I. Disperse Blue 1		2475-45-8
	C.I. Disperse Blue 3		2475-46-9
	C.I. Disperse Blue 7		3179-90-6
	C.I. Disperse Blue 26		3860-63-7
	C.I. Disperse Blue 35		12222-75-2
	C.I. Disperse Blue 102		12222-97-8
	C.I. Disperse Blue 106		12223-01-7
	C.I. Disperse Blue 124		61951-51-7
	C.I. Disperse Brown 1		23355-64-8
	C.I. Disperse Orange 1		2581-69-3
	C.I. Disperse Orange 3		730-40-5
	C.I. Disperse Orange 37		12223-33-5
	C.I. Disperse Orange 76		13301-61-6
	C.I. Disperse Red 1		2872-52-8
	C.I. Disperse Red 11		2872-48-2
	C.I. Disperse Red 17		3179-89-3
	C.I. Disperse Yellow 1		119-15-3
	C.I. Disperse Yellow 3		2832-40-8
	C.I. Disperse Yellow 9		6373-73-5
	C.I. Disperse Yellow 39		12236-29-2
	C.I. Disperse Yellow 49		54824-37-2
			Shall provide declaration of compliance supported by Safety Data Sheet.
v. Chrome mordant dyes	Chrome mordant dyes shall not be used.	n/a	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*
vi. Metal complex dyes	Metal complex dyes based on copper, chromium and nickel shall only be permitted for leather, dyeing wool, polyamide or blends of these fibres with man-made cellulose fibres (e.g. viscose).	n/a	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*
vii. Pigments	(i) Pigments based on cadmium, lead, chromium, mercury, antimony shall not be used	*n/a*	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*

3. Restriction applying to finishing process: (Biocides, water repellents, flame retardants)

Applicability/ substance group	Scope of restriction	Limit values	Verification
(a) PFCs			
Final product	(i) Fluorinated water, stain and oil repellent treatments shall not be used for footwear impregnation. These shall include perfluorinated and polyfluorinated treatments. Non-fluorinated treatments shall be readily biodegradable and non-bioacumulative in the aquatic environment including aquatic sediment.	n/a	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of compliance supported by Safety Data Sheet.*
Footwear with declared integrated water repellence function	(ii) Fluopolymer membranes and laminates may be used for footwear only if the required water penetration of the material shall be lower than 0.2 g and the water absorption shall be lower than 30% according to Standard ISO 20347. They shall not be manufacturer using PFOA or any of its higher	n/a	*Assessment and verification: the applicant shall provide declaration of compliance from the membrane or laminate manufacturer with respect to the polymer production. The declaration shall be supported by technical test results for material*

	homologous as defined by the OECD[266].		*water penetration according to ISO 20347.*
(b) Flame retardants			
Final product	(i) Flame retardants shall not be used with the exception 3 (c) (ii)	n/a	*Assessment and verification: the applicant and/or his supplier(s) shall provide declaration of non-use.*
Footwear with incorporated flame retardant function	(ii) For footwear classified as Category III Personal Protective Equipment and marketed as such, with incorporated flame retardants function to ensure safety at work in line with the specifications laid down by PPE Directive 89/686/EEC, the substances used to achieve flame retardancy shall comply with the Criterion 6.	n/a	*Assessment and verification: the applicant shall provide either declarations of non-use or declaration of compliance of substances and mixtures used as flame retardants with requirements set in Criterion 6. In both cases the declaration shall be supported by Safety Data Sheet. A list of flame retardants used added to the product shall be provided together with related H statements / R phrases. Proof that the product is marketed as flame retardant protective equipment shall be provided.*

4. Restrictions that apply to the final product or specific parts thereof

Applicability/ substance group	*Scope of restriction*	*Limit values*	*Verification*
(a) PAHs			
Plastics and synthetic rubber, artificial leather, plastic coatings	Below listed Polycyclic Aromatic Hydrocarbons (PAHs) shall not be present above the specified limits in the plastic, textile coatings, synthetic rubber.	*10 mg/kg sum total, BaP <1 mg/kg* *For children under 3 years old:. <0.2 mg/kg sum total BaP <0.2 mg/kg*	*Assessment and verification: the applicant shall provide a declaration of compliance supported by the test report, using test method ZEK 01.2-08*

Name	CAS
Naphthalene	91-20-3
Acenaphthylene	208-96-8
Acenaphthene	83-32-9
Fluorene	86-73-7
Phenanthrene	85-1-8
Anthracene	120-12-7
Fluoranthene	206-44-0
Pyrene	129-00-0
Chrysene	218-01-9
Benzo[a]anthracene	56-55-3
Benzo[b]fluoranthene	205-99-2
Benzo[k]fluoranthene	207-08-9
Benzo[a]pyrene	50-32-8
Dibenzo[a,h]anthrancene	53-70-3
Indeno[1,2,3-c,d]pyrene	193-39-5
Benzo[g,h,i]perylene)	191-24-2
Benzo[j]fluoranthen	205-82-3
Benzo[e]pyren	192-97-2

(b) N-Nitrosamines			

<table>
<tr><th>Applicability/ substance group</th><th>Scope of restriction</th><th>Limit values</th><th>Verification</th></tr>
<tr><td>Natural and synthetic rubber</td><td>The following N-Nitrosamines shall not be detected in synthetic and natural rubber<table><tr><td>N-nitrosamine</td></tr><tr><td>N-nitrosodiethanolamine (NDELA)</td></tr><tr><td>N-nitrosodimethylamine (NDMA)</td></tr><tr><td>N-nitrosodipropylamine (NDPA)</td></tr><tr><td>N-nitrosodiethylamine (NDEA)</td></tr><tr><td>N-nitrosodiisoprpylamine (NDiPA)</td></tr><tr><td>N-nitrosodibutylamine (NDBA)</td></tr><tr><td>N-nitrosopiperidine (NPIP)</td></tr><tr><td>N-nitrosodiisobutylamine (NdiBA)</td></tr><tr><td>N-nitrosodiisononylamine (NdiNA)</td></tr><tr><td>N-nitrosomorpholine (NMOR)</td></tr><tr><td>N-nitroso N-methyl N-phenylamine (NMPhA)</td></tr><tr><td>N-nitroso N-ethyl N-phenylamine (NEPhA)</td></tr><tr><td>N-Nitrosopyrrolidine</td></tr></table></td><td>Not detectable</td><td>Assessment and verification: the applicant shall provide a declaration of compliance supported by the test report, using test method EN 12868 or EN 14602</td></tr>
<tr><td colspan="4">(c) Tinorganic substances</td></tr>
<tr><td>final product</td><td>Below listed tinorganic substances shall not be present in the final product above specified limit concentrations.<table><tr><td>Tributyltin (TBT)</td><td>0,025 mg/kg</td></tr><tr><td>Dibutyltin (DBT)</td><td>1 mg/kg</td></tr><tr><td>Monobutyltin c (MBT)</td><td>1 mg/kg</td></tr><tr><td>Dioctyltin (DOT)</td><td>1 mg/kg</td></tr><tr><td>Triphenyltin (TPT)</td><td>1 mg/kg</td></tr></table></td><td>limit values specified for each tinorganic substance</td><td>Assessment and verification: the applicant shall provide a declaration of compliance supported by test results in accordance with test method ISO/TS 16179.</td></tr>
<tr><td colspan="4">(d) Phtalates</td></tr>
<tr><td rowspan="2">Final product (plastics, rubber, artificial leather, coatings and printings of materials)</td><td>(i) Only phthalates that at the time of application have been risk assessed and fulfil the requirements of Criterion 6 may be used in the product.</td><td>n/a</td><td>Assessment and verification: The applicant shall provide declaration of compliance supported by safety data sheet</td></tr>
<tr><td>(ii) The following plasticizers shall not be used to the product, any article of it and to any homogeneous part of it:
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) CAS: 71888-89-6
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters ((DHNUP) CAS: 68515-42-4
Bis(2-methoxyethyl) phthalate (DMEP) CAS: 117-82-8
Diisobutyl phthalate (DIPB) CAS: 84-69-5
Bis (2-ethylhexyl) phthalate (DEHP) CAS: 117-81-7
Dibutyl phthalate (DBP) CAS: 84-74-2
Benzyl butyl phthalate (BBP) CAS: 85-68-7
Di-n-pentyl phthalate (DPP) CAS: 131-18-0
1–2 -Benzenedicarboxylic acid, dipentylester, branched and linear CAS: 84777-06-0</td><td>The sum of the prohibited plasticizers <u>For adults</u> lower than 0.10 % by weight; <u>For children</u> under 3 years old: 0,05% by weight.</td><td>Assessment and verification: <u>For products intended for adults:</u> the applicant shall provide either declaration of non-use by polymer manufacturer supported by Safety Data Sheet for the plasticisers used in the formulation or the test results according to ISO/TS 16181. <u>For products intended for children under 3 years old</u>: the applicant shall provide declaration of compliance supported by test results according to ISO/TS 16181 shall be provided.</td></tr>
</table>

<table>
<tr><th>Applicability/ substance group</th><th>Scope of restriction</th><th>Limit values</th><th>Verification</th></tr>
<tr><td></td><td>– Diisopentylphthalate (DIPP) CAS: 605-50-5
– Dihexyl phthalate (DnHP) CAS: 84-75-3
– N-pentyl-isopentylphthalate CAS: 607-426-00-1
(iii) The following phthalates shall not be used in footwear for children below 3 years age.
p-nonylphtalate (DINP)* CAS: 28553-12-0; 68515
octylphthalat (DNOP)* CAS: 117-84-0
decylphthalate(DIDP)* CAS: 26761-40-0; 68515-</td><td></td><td></td></tr>
<tr><td colspan="4">(e) Extractable metals</td></tr>
<tr><td>Final product</td><td>For footwear intended for children below 3 years old, the below listed substances shall not be present in the final product above specified limit concentrations.
b) 30.0 mg/kg
0.2 mg/kg
d) 0.1 mg/kg
Cr) 1.0 mg/kg (for textile)
1.0 mg/kg
25.0 mg/kg
0.2 mg/kg
1.0 mg/kg
) 0.02 mg/kg
The following limits value shall apply to footwear other than the footwear intended for children below 3 years old.
b) 30.0 mg/kg
1.0 mg/kg
d) 0.1 mg/kg
Cr) 2.0 mg/kg (for textile)
4.0 mg/kg
50.0 mg/kg
1.0 mg/kg
1.0 mg/kg
) 0.02 mg/kg</td><td>limit values specified for each substance</td><td>Assessment and verification: the applicant and/or his supplier(s) shall provide a declaration of compliance supported by the test results in accordance with the following test methods: Extraction - EN ISO 105-E04-2013 (Acid sweat solution). Detection: EN ISO 17072-1 for leather, ICP-MS, ICP-OES (for textile and plastic).
Testing shall be carried out annually during the license period in order to demonstrate ongoing compliance with the criterion.</td></tr>
<tr><td>Metal components</td><td>The migration of nickel from nickel containing metal alloys which are in direct and prolonged contact with skin shall be lower than 0.5 µg/cm2/week</td><td>0.5µg/cm2/week</td><td>Assessment and verification: Declaration of no presence of nickel in footwear component supported by the certification from the manufacturer of metal parts, otherwise declaration of compliance supported by the results of test method EN 1811.</td></tr>
<tr><td>Chromium tanned leather</td><td>For shoes containing chromium tanned leather, there shall be no Chromium (VI) in the final product.</td><td>Not detectable</td><td>Assessment and verification: the applicant and/or his supplier(s) shall provide a test report, using test method EN ISO 17075 (detection limit 3 ppm). The sample preparation must follow the indications of the EN ISO 4044.
Testing shall be carried out annually during the license period in order to demonstrate ongoing compliance with the criterion. Non-chromium tanned leather is exempt from the requirement.</td></tr>
</table>

Applicability/ substance group	*Scope of restriction*	*Limit values*	*Verification*
	For shoes containing chromium tanned leather extractable chromium content in the final product shall be lower than 200 mg/kg.	*200 mg/kg*	*Assessment and verification: the applicant and/or his supplier(s) shall provide a test report, using test method EN ISO 17072-1. Testing shall be carried out annually during the license period in order to demonstrate ongoing compliance with the criterion. Non-chromium tanned leather is exempt from the requirement.*
(f) TDA and MDA			
PU foam, PU coatings	The following limits value shall apply to footwear that contain PU foam or PU coatings 2,4 Toluenediamine (2,4-TDA, 95-80-7) 4,4'-Diaminodiphenylmethane (4,4'-MDA, 101-77-9)	*Lower than 5 mg/kg each*	*Assessment and verification: the applicant shall provide test results according to the following procedure: Extraction with 1% aqueous acetic acid solution. The sample must be a composite of 6 pieces to be taken from beneath each samples face (to a maximum of 2 cm from the surface). Four repeat extractions of the same foam sample must be performed maintaining the sample weight to volume ratio of 1:5 in each case. The extracts are combined, made up to a known volume, filtered and analysed by HPLC-UV or HPLC-MS. If HPLC-UV is performed and interference is suspected, reanalysis with HPLC-MS should be performed.*
(g) Vinyl Chloride Monomer (VCM)			
PVC, PVC coatings	If PVC or PVC coatings is used in footwear intended for children under 3 years old, it shall not contain residual vinyl monomer.	*1 mg/kg*	*Assessment and verification: the applicant and/or his supplier(s) shall provide a test report according to test method ISO60401*
(h) Formaldehyde			
final product: leather, textile	The amount of free and hydrolysed formaldehyde of the components of the footwear shall not exceed the following limits: — textile: <n.d. (*20 mg/kg*), — leather: < n.d. (*20 mg/kg*) (children footwear), *75 mg/kg* (insole and socks), *150 mg/kg* for other parts of the product	*Specified limit values*	*Assessment and verification: the applicant and/or his supplier(s) shall provide a test report, using the following test methods: Textiles: EN ISO 14184-1; Leather: EN ISO 17226-1.*
(i)Antimony			
Raw polyester fibres	The level of antimony present in the raw polyester fibres shall not exceed 260 ppm.	*260 mg/kg*	*Assessment and verification: the applicant or fibre manufacturer shall either provide a declaration of non-use during manufacturing process or a test report using the following test methods: direct determination by Atomic Absorption Spectrometry or Inductively Coupled Plasma (ICP) Mass Spectrometry. The test shall be carried out on a composite sample of raw fibres prior to any wet processing.*