



Revision of the European Ecolabel and Green Public Procurement Criteria for Textile Products

TECHNICAL REPORT AND CRITERIA PROPOSALS

(Draft) Working Document

for

1st AHWG MEETING FOR THE

REVISION OF THE ECOLABEL CRITERIA

FOR TEXTILE PRODUCTS

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Table of contents

1 INTRODUCTION	5
1.1 How the Preliminary Report informs the criteria proposals	5
1.2 The current scope of the EU Ecolabel criteria document for Textile Products	6
1.3 The key environmental impacts associated with the product group	9
1.4 The proposed framework for the revision	10
2 PRODUCT GROUP DEFINITION.....	12
3 CURRENT CRITERIA AND PROPOSED CHANGES	15
3.1 TEXTILE FIBRE CRITERIA	17
Current criteria 1: Acrylic.....	17
Current criterion 2: Cotton and other natural cellulosic seed fibres (including kapok)	19
Current criterion 3: Elastane	30
Current criterion 4: Flax and other bast fibres (including hemp, jute and ramie).....	31
Current criterion 5: Greasy wool and other keratin fibres (including wool from sheep, camel, alpaca, goat)	32
Current criterion 6 : Man-made cellulose fibres (including viscose, lyocell, acetate, cupro, triacetate)	37
Current criterion 7: Polyamide.....	43
Current criterion 8: Polyester	46
Current criterion 9: Polypropylene.....	49
3.2 PROCESSES AND CHEMICALS CRITERIA.....	51
Proposed new criterion 10: Hazardous substances and mixtures	51
Current criterion 10: Auxiliaries and finishing agents for fibres and yarns	61
Current criterion 11: Biocidal or biostatic products.....	67
Current criterion 12: Stripping or depigmentation	71
Current criterion 13: Weighting	72
Current criterion 14: All chemicals and chemical preparations	73
Current criterion 15: Detergents, fabric softeners and complexing agents	76
Current criterion 16 Bleaching agents: Chlorine agents are excluded for bleaching yarns, fabrics and end products.....	78
Current criterion 17, 21, 22 and 23: Dyes	79
Current criterion 18: Impurities in pigments: Insoluble colour matter without fibre affinity ..	83
Current criterion 19: Chrome mordant dyeing	84

Current criterion 20: Metal complex dyes.....	85
Current criterion 21: Azo dyes.....	87
Current criterion 22: Dyes that are carcinogenic, mutagenic or toxic to reproduction.....	87
Current criterion 23: Potentially sensitising dyes	87
Current criterion 24: Halogenated carriers for polyester	87
Current criterion 25: Printing	88
Current criterion 26: Formaldehyde	90
Current Criterion 27: Waste water from discharges from wet-processing.....	92
Current criterion 28: Flame retardants	94
Current criterion 29: Anti felting finishes	99
Current criterion 30: Fabric finishes	102
Current Criterion 31: Fillings	104
Current Criterion 32: Coatings, laminates and membranes	105
Current Criterion 33: Energy and water use.....	108
3.3 FITNESS FOR USE CRITERIA	109
Current criterion 34: Dimensional changes during washing and drying	109
Current criterion 35: Colour fastness to washing	112
Current criterion 36: Colour fastness to perspiration (acid, alkaline).....	113
Current criterion 37: Colour fastness to wet rubbing	114
Current criterion 38: Colour fastness to dry rubbing	115
Current criterion 39: Colour fastness to light.....	116
4 PROPOSALS FOR NEW CRITERIA AREAS	118
4.1 Corporate Social Responsibility (CSR) related criteria.....	118
4.2 Design for durability.....	127
4.3 Design for recycling.....	129
4.4 Energy saving advice	131
4.5 Avoidance of air freight.....	133
References.....	139
APPENDIX	
Appendix 1 – Dyes.....	135

1. INTRODUCTION

This document is intended to provide the background information for the revision of the Ecolabel criteria for Textiles and the development of Green Public Procurement (GPP) criteria for this product group. The study has been carried out by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS) with technical support from the Danish Standards Foundation (DS) and COWI. The work is being developed for the European Commission's Directorate General for the Environment.

The main purpose of this document is to evaluate the current criteria and discuss if the criteria are still relevant or should be revised, restructured or removed. This document is complemented by and informed by the preliminary report, which provides the legislative, market and technical analysis to support the criteria proposals.

For each criterion a table indicating any major changes proposed and a direct comparison of the current and proposed criteria is provided. After each table a discussion of the rationale for the proposed change (or not) to the criterion is made. Proposals for new criteria have also been made together with the rationale behind each proposal.

The intention is that this technical report will be updated during the criteria development process based on new information, stakeholder inputs or input from the working group meetings. The final technical report will bring together the scientific arguments for the proposed new criteria document.

1.1 How the Preliminary Report informs the criteria proposals

The basis of this technical report are the conclusions and recommendations in the preliminary report. The preliminary report sets the framework for the revision and consists of three main chapters which reflect the procedure and methodology for the revision of EU Ecolabel criteria:

- Chapter one provides a **background** for the revision process by:
 - Defining the scope of the criteria revision
 - Summarising the legal framework relevant for the production of textiles,
 - Addressing Commission Statements arising from the 2009 revision
 - Summarising initial stakeholder input to the revision from a questionnaire.
- Chapter two provides updated **market analysis** which brings together:

- Statistics describing the market for textile products in the EU
 - A summary of eco-innovations by front runners in the industry
 - The market status of the EU Ecolabel textile licenses
 - A summary of other labels and initiatives
- Chapter three provides an up-to-date technical analysis which comprises:
 - A review of the findings from two textile product LCA studies
 - .Technical analysis of key environmental issues and industry best practice
 - Discussion of how these issues could be addressed by the criteria revision

This technical report takes the findings from the preliminary report and then discusses all current criteria and how the environmental issues identified can be addressed through criteria revisions. For each criterion consultation questions are listed. Input from stakeholder on these issues is of great importance in formulating the final proposal for a new and updated criteria document.

1.2 The current scope of the EU Ecolabel criteria document for Textile Products

The current scope of the EU Ecolabel criteria document for textile products is defined in article 1 of the Commission Decision of 9 July 2009 'establishing the ecological criteria for the award of the Community Ecolabel for textile products' [Decision 567/2009]. Three categories are defined:

- Textile clothing and accessories: clothing and accessories (such as handkerchiefs, scarves, bags, shopping bags, rucksacks, belts etc.) consisting of at least 90 % by weight of textile fibres;
- Interior textiles: textile products for interior use consisting of at least 90 % by weight of textile fibres. Mats and rugs are included. Wall to wall floor coverings and wall coverings are excluded;
- Fibres, yarn and fabric (including durable non-woven) intended for use in textile clothing and accessories or interior textiles.

Feedback on the current scope of the label was invited at the beginning of the revision process in the form of a questionnaire sent to registered stakeholders. The results of the questionnaire and specific comments relating to the scope and definition are presented in section 2 of this report.

The criteria document itself currently consists of a short framework which sets out the objectives of the criteria and notes on assessment and verification requirements. The aims of the criteria are described as being:

'[the promotion of] the reduction of water pollution related to the key processes throughout the textile manufacturing chain, including fibre production, spinning, weaving, knitting, bleaching, dyeing and finishing.'

The criteria document consists of forty criteria which are intended to meet this specific aim, together with the aims of the EU Ecolabel Regulation. The forty ecological criteria are divided into three main categories:

1. Textile fibre criteria (9 criteria)
2. Processes and chemicals criteria (24 criteria)
3. Fitness for use criteria (7 criteria)

The detailed criteria under each category are listed in table 1.1. Application of the first set of criteria is determined by the form of textile fibre. Application of the second set of criteria vary depending on the fibre, the processing stages that have been used to produce the finished garment or fabric and the type and application of the garment or fabric. Application of the third set of criteria is generic to all products apart from specific stated exclusions.

Table 1.1: Current textile product Ecolabel criteria according to Decision 2009/567/EC

Textile fibre criteria	<ol style="list-style-type: none">1. Acrylic2. Cotton and other natural cellulosic seed fibres (including kapok)3. Elastane4. Flax and other bast fibres (including hemp, jute and ramie)5. Greasy wool and other keratin fibres (including wool from sheep, camel, alpaca and goat)6. Man-made cellulose fibres (including viscose, lyocell, acetate, cupro and triacetate)7. Polyamide8. Polyester9. Polypropylene
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<p>Processes and chemicals criteria</p>	<ol style="list-style-type: none"> 10. Auxiliaries 11. Biocidal and biostatic products 12. Stripping or depigmentation 13. Weighting 14. All chemicals and chemical preparations 15. Detergents, fabric softeners and complexing agents 16. Bleaching agents 17. Impurities in dyes: Colour matter with fibre affinity (soluble or insoluble) 18. Impurities in pigments: Colour matter with fibre affinity (soluble or insoluble) 19. Chrome mordant dyeing 20. Metal complex dyes 21. Azo dyes 22. Dyes that are carcinogenic, mutagenic or toxic to reproduction 23. Potentially sensitizing dyes 24. Halogenated carriers for polyester 25. Printing 26. Formaldehyde 27. Wastewater discharges from wet processing 28. Flame retardants 29. Anti felting finishes 30. Fabrics finishes 31. Fillings 32. Coatings, laminates and membranes 33. Energy and water use
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Fitness for use criteria	<p>34. Dimensional changes during washing and drying</p> <p>35. Colour fastness to washing</p> <p>36. Colour fastness to perspiration (acid, alkaline)</p> <p>37. Colour fastness to wet rubbing</p> <p>38. Colour fastness to dry rubbing</p> <p>39. Colour fastness to light</p> <p>40. Information appearing on the ecolabel</p>

1.3 The key environmental impacts associated with the product group

Based on the LCA review presented in the preliminary report the overall findings indicate that the fibre production phase, followed by the use phase, are associated with the most significant environmental impacts during the life cycle of textile products. The specific environmental 'hot spots' identified as being of significance were as follows:

- **Cotton production:** The ecotoxicity associated with the production and use of fertilizers and pesticides is the main contributor to both energy consumption and ecotoxicity. The resource impact of water use for irrigation was also highlighted as being significant. A shift to organic cotton should significantly reduce the toxicity profile of products made of cotton, although this would not address water use.
- **Synthetic fibre production (acrylic, nylon, polyamide, polypropylene):** The climate change and ecotoxicity impact of energy and raw material use to manufacture fibres. Nylon and acrylic are the most energy intensive to produce and are technically the most difficult to recycle. The LCA case studies reviewed highlighted how is the energy required to produce garments is, to some extent, influenced by fibre blends.
- **Man-made cellulose fibres (viscose):** The climate change and ecotoxicity impact of energy use to manufacture fibres. The LCA case studies reviewed highlighted viscose, which was used as a the reference fibre, as being the most energy intensive fibre to produce.

- **Raw material and feedstocks required to manufacture cellulose fibre, soaping agents and softeners.** Timber and bamboo are the predominant sources of raw material for cellulose fibre manufacturing. Palm oil was identified as especially significant as a feedstock for the manufacturing of soaping agents and softeners. Viscose has significantly higher impacts associated with soaping agent and softener use;
- **Process energy and ecotoxicity associated with the fabric formation, finishing and printing and dyeing stages of production.** However, there was conflicting evidence in this area, with one LCA study reaching the conclusion that the effect on ecotoxicity from the production phase for traditional cotton is less significant overall. The scouring stage was highlighted in relation to wool. Dye carriers were highlighted in relation to polyester.
- **Fuel use and climate change impacts associated with shipping and air freight** to distribute products. Although air freight only accounts for a small share of distribution its impacts are proportionally much higher.
- **Energy and ecotoxicity associated with the use phase** of textile products. This primarily relates to washing energy and detergents, and can be influenced by fibre choice and blends.

The findings also highlighted the potential benefits of more sustainable systems of resource use associated with the disposal phase. The allocation of benefits from re-use, recycling and energy recovery was an area specifically highlighted.

A number of environmental issues currently addressed by the EU Ecolabel criteria were not specifically highlighted by the LCA findings as being significant overall. These included flame retardants, dyes and plasticizers. To some extent this may have been due to the exclusion and substitution of the most hazardous substances from the LCA analysis. Nanotechnology was also identified as a new area of focus for which limited data and evidence currently exists for the potential environmental impacts. However, evidence suggests that a precautionary approach may be justified.

1.4 The proposed framework for the revision

Based on the discussion in the Preliminary Report a framework has been proposed for the criteria revision. This framework proposes five themes that are intended to inform our approach to the revision:

1. Focussed technical updates: *based on BREF and technical evidence review*
2. Improved whole life scope: *based on a fibre and product LCA review*

3. Reflect product best practice: *based on eco-innovation by manufacturers, retailers and brands*
4. Explore options for label and initiative harmonisation: *based on a review of state, NGO and private label scheme criteria*
5. Improve focus on opportunities in target market segments: *based on textile label, public procurement consumer and industry priorities*

It is currently suggested to keep the overall structure and approach of the existing criteria document and not to split the criteria by market segment.

The suggestion is to improve in the documentation the weight of the proposed criteria by ensuring that the issues highlighted as environmental 'hot spots' have the strictest criteria based on industry best practice. In seeking to do this a number of criteria revisions and new criteria proposals are proposed. For other relevant issues not listed as 'hot spots' relevant criteria would be set but based more on an industry average. It is also to be considered whether all the criteria should be retained.

It is also recommended to discuss harmonisation with other labels or 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 which are to be discussed.

The readability of the document as well options to streamline and focus the assessment and verification element are also recommended to be in focus – again in order to streamline and lighten the application process. The new criteria dealing with hazardous substances may also provide a new way of thinking about the structure of the criterion – for example, in order to highlight criteria that relate to processes and criteria that relate to finished product.

The main focus and the most selective criteria shall be the textile fibre criteria. Here an in-depth revision is necessary, especially for the criteria for cotton, man-made cellulose fibres and man-made synthetic fibres.

With regards to the process and chemical criteria the focus shall be on updating the criteria in relation to REACH, the Ecolabel Regulation and BAT and to analyse the possibility to harmonise with other labels or schemes. The latter being a significant consideration in relation to managing the administrative burden for Competent Bodies.

Several new areas for developing criteria have been proposed. They are all relevant either from an environmental point of view or because of market expectations. It has to be discussed whether it is possible to develop criteria in these areas and if it is feasible taken into account the improvement potential and the ability of both applicants and Competent bodies to verify compliance.

2. PRODUCT GROUP DEFINITION

<p>Major proposed changes</p>	<p>The scope is the same but more specific information on excluded product categories and more information on how to calculate the percentage of fibres are proposed to be added.</p>
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>The product group “textile products” shall comprise:</p> <p>Textile clothing and accessories: Clothing and accessories (such as handkerchiefs, scarves, bags, shopping bags, rucksacks, belts etc.) consisting of at least 90% by weight of textile fibres;</p> <p>Interior textiles: Textile products for interior use consisting of at least 90% by weight of textile fibres. Wall and floor coverings are excluded;</p> <p>Fibres, yarn and fabric: intended for use in textile clothing and accessories or interior textiles.</p> <p>For ‘textile clothing and accessories’ and for ‘interior textiles’: Down, feathers, membranes and coatings need not be taken into account in the calculation of the percentage of textile fibres.</p>	<p>The product group “textile products” shall comprise:</p> <p>Textile clothing and accessories: Clothing and accessories (such as handkerchiefs, scarves, bags, shopping bags, rucksacks, belts etc.) consisting of at least 90% by weight of textile fibres;</p> <p>Interior textiles: Textile products for interior use consisting of at least 90% by weight of textile fibres.</p> <p>Fibres, yarn and fabric: intended for use in textile clothing and accessories or interior textiles.</p> <p>For ‘textile clothing and accessories’ and for ‘interior textiles’: Down, feathers or synthetic materials not covered by this document need not be taken into account in the calculation of the percentage of textile fibre. Membranes and coatings need not be taken into account in the calculation of the percentage of textile fibres.</p> <p>Fillings made of fibres covered by this document shall also fulfil the relevant fibre criteria.</p>

	<p>The following products are not covered by these criteria:</p> <ul style="list-style-type: none"> • Furniture upholstery • Wall and floor coverings • Fabrics that form part of structures intended for use outdoors • Single use products
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Discussion

The scope of the revision was discussed and refinements proposed in the Preliminary report. Initial feedback from stakeholders was that in general the scope remains relevant and adequate but that some issues should be clarified:

1. Points from the Competent Body forum should be addressed, eg which product categories are included (single use products, hessian cloth – intermediate product, textiles for outdoor use?)
2. Define filling materials more clearly and also take the 90% calculation into account – what is not included in the calculation?
3. Define end products and intermediate products (which are not included in the scope)
4. Include B2B products and spinners, dyers and textiles finishers
5. Define “smart textiles” and textiles containing electronics and how they shall be included

Single use products are not currently included. This has been discussed among the Competent Bodies and in order to avoid further discussions and provide clearer information to applicants this information has been added to the scope. Likewise for textiles for use in outdoor structures. These are not covered by these criteria and cannot easily be included. The reasoning is that the fitness for use criteria might not be relevant for these kinds of products. They may also require additional fabric materials to be introduced into the criteria.

Regarding fillings it should be made clearer how to calculate the percentage and that fillings made of fibres mentioned in the criteria document shall also fulfill the relevant fibre criteria.

In the present criteria document no definition of smart textiles is given. Based on this smart textiles are covered by the criteria document if all environmental criteria are fulfilled. If required a definition could be:

Textiles that can sense and react to changes in the environment, such as changes from mechanical , thermal, chemical, magnetic and other sources.

Textiles containing electronics – so-called e-textiles - are still a niche product. None of the LCA studies taken into consideration in this work have included the impact from electronic components. Hence we do not have any knowledge of what the environmental profile for these products could look like. Furthermore, to improve market penetration of labelled textiles the product group should not be too diverse. Input is therefore requested from stakeholders into consideration of both smart and e-textiles in this product revision.

The inclusion of sub suppliers like spinners, dyers and fibre suppliers has been discussed among Competent Bodies. The advantage is that if these steps in the product chain have their own license it will be much easier for the end producer or a retailer to pick the right sub suppliers. Today a sub supplier to a license holder is confidential like other part of the application. For some sub suppliers it could be attractive to have their own license (B2B). But on the other hand some license holders may wish to keep their sub suppliers confidential as they may be regarded as a trade secret.

Consultation questions

1. Should smart textiles be included in this product group?
2. It is necessary to add a definition of smart textiles? If yes, is the suggested definition sufficient?
3. Should e- textiles be included in this product group?
4. Should all parts of the product supply chain be eligible for the EU Ecolabel?

3. CURRENT CRITERIA AND PROPOSED CHANGES

In this section each of the criteria in the current criteria document (Decision 567/2009) are evaluated and a proposal for a new criterion is made.

To give a better view of the changes made a table is used. Firstly highlighting the major changes proposed followed by the current criterion with the new proposal next to it in order to be able to make a direct comparison. An example of the format we have used is presented below.

Subject to discussion with stakeholders, it is currently the intention to follow the same structure in the criteria document as in Decision 567/2009.

- Textile Fibre Criteria
- Process and Chemical Criteria
- Fitness For Use Criteria

Proposals and requirements for criteria in new areas will be discussed in section 4.

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EXAMPLE STRUCTURE OF EACH CRITERIA PROPOSAL

Major proposed changes	<i>A brief summary of the major proposed changes to the criterion are presented here</i>	
Present criterion, Decision 2009/567		Suggested criterion
<i>The text of the current criterion as published in the product group Decision is provided here as a point of reference.</i>		<i>Any proposed changes to the text of the criterion are provided here, integrated into the current criteria text in order to illustrate how it could work.</i>

Discussion

Here the technical analysis and arguments to support proposals for criteria revisions are presented and discussed.

Consultation questions

- *Here we list the key questions for stakeholders that have arisen from our analysis of each criteria*

3.1 Textile fibre criteria

CURRENT CRITERIA 1: ACRYLIC

Major proposed changes	<ul style="list-style-type: none"> Minimum xx% recycled content or a process energy benchmark of x.x MJ/kg of fibre
Present criterion, Decision 2009/567	Suggested criterion
<p>a) The residual acrylonitrile content in raw fibres leaving the fibre production plant shall be less than 1.5 mg/kg.</p> <p><i>Assessment and verification:</i> The applicant shall provide a test report, using the following test method: extraction with boiling water and quantification by capillary gas-liquid chromatography.</p> <p>(b) The emissions to air of acrylonitrile (during polymerisation and up to the solution ready for spinning), expressed as an annual average, shall be less than 1 g/kg of fibre produced.</p> <p><i>Assessment and verification:</i> The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance</p>	<p>a) The residual acrylonitrile content in raw fibres leaving the fibre production plant shall be less than 1.5 mg/kg.</p> <p><i>Assessment and verification:</i> The applicant shall provide a test report, using the following test method: extraction with boiling water and quantification by capillary gas-liquid chromatography.</p> <p>b) The emissions to air of acrylonitrile (during polymerisation and up to the solution ready for spinning), expressed as an annual average, shall be less than 1 g/kg of fibre produced.</p> <p>c) A maximum process energy limit for producing 1 kg acrylonitrile (10% below EU average) or the fibre to consist of a minimum xx % recycled material.</p> <p><i>Assessment and verification:</i> The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>

Discussion

It is suggested to include a criterion for process energy consumption or the content of reused material. These points were identified as being important areas of potential environmental improvement in the preliminary report. Process energy benchmarks published by Plastics Europe were presented and discussed in section 3.3.2 of the preliminary report. Further evidence is required as to the environmental benefits of acrylic recycling to produce textile fibres and as to its technical viability and market acceptability as an option.

Assessment and verification have been adjusted according to steerability and importance.

Consultation questions

- Should a new criterion requiring a benchmark performance for process energy use be introduced and, if so, in what form and at what level? Would this be easily verifiable?
- Should a new criterion requiring a minimum recycled content be introduced and if so what % would be achievable?

3.2 CURRENT CRITERION 2: COTTON AND OTHER NATURAL CELLULOSIC SEED FIBRES (INCLUDING KAPOK)

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • A requirement for organic cotton • An significant increase in the minimum % of organic cotton • Alternatively recycled cotton or cotton approved by Better Cotton Initiative can be approved • Updating of the list of excluded pesticides (if this is to be retained as an alternative to organic, recycled or better cotton certification) • Options for encouraging reductions in water use for irrigation are to be discussed
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>Cotton and other natural cellulosic seed fibres (hereinafter referred to as cotton) shall not contain more than 0.05 ppm (sensitivity of the test method permitting) of each of the following substances: aldrin, captafol, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, hexachlorocyclohexane (total isomers), 2,4,5-T, chlordimeform, chlorobenzilate, dinoseb and its salts, monocrotophos, pentachlorophenol, toxaphene, methamidophos, methylparathion, parathion, phosphamidon. The test should be made on raw cotton, before it comes through any wet treatment, for each lot of cotton or two times a year if more than two lots of cotton per year are received.</p> <p>This requirement does not apply where more than 50% of the cotton content is organically grown cotton or transitional cotton, that is to say certified by an independent organisation to</p>	<p>A minimum of x% of organic, recycled or better cotton content should be used and this should be certified by an independent organisation to have been produced in conformity with the production and inspection requirements laid down in EU Regulation (EC) 834/2007 on an annual basis.</p> <p>Allowed are cotton that meets one of the following standards:</p> <p>x % Organic cotton</p> <p>Standards based on EU Regulation (EC) 834/2007 (or subsequent EU Organic labelling Regulations)</p> <p>Global Organic Standard (GOTS)</p> <p><i>Approved is also transitional cotton</i></p>

<p>have been produced in conformity with the production and inspection requirements laid down in Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs (1).</p> <p>This requirement does not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75% of the cotton used in the final product, together with a declaration from these farmers that the substances listed above have not been applied to the fields or cotton plants producing the cotton in question, or to the cotton itself.</p> <p>Where at least 95% of the cotton in one product is organic, that is to say certified by an independent organisation to have been produced in conformity with the production and inspection requirements laid down in Regulation (EEC) No 2092/91 the applicant may place the mention 'organic cotton' next to the eco-label. Between 70% and 95% it may be labelled "made with xy% organic cotton").</p> <p>The applicant shall either provide proof of organic certification or documentation relating to the non-use by the farmers or a test report, using the following test methods: as appropriate, US EPA 8081 A (organo-chlorine pesticides, with ultrasonic or Soxhlet extraction and apolar solvents (iso-octane or hexane)), 8151 A (chlorinated herbicides, using methanol), 8141 A (organophosphorus</p>	<p><i>or</i></p> <p>y % Recycled cotton</p> <p>Global Recycling Standard</p> <p><i>or</i></p> <p>z % Better cotton</p> <p>Better Cotton Initiative (BCI)</p> <p>Where at least 95% of the cotton in one product is organic, that is to say certified by an independent organisation to have been produced in conformity with the production and inspection requirements laid down in EU Regulation (EC) 834/2007 the applicant may place the mention 'organic cotton' next to the eco-label. Where the content is between 70% and it may be labelled "made with x-y% organic cotton").</p> <p>The applicant shall provide:</p> <ul style="list-style-type: none"> • Information about the certification body, • A declaration stating the proportion of certified cotton used in the total production of textiles on a yearly basis <p>The competent body may request the submission of further documentation to enable it to assess whether the requirements of the standard and certification system have been fulfilled</p>
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<p>compounds), or 8270 C (semi-volatile organic compounds).</p> <p>A minimum of 3% of organic cotton that is to say certified by an independent organisation to have been produced in conformity with the production and inspection requirements laid down in Regulation (EEC) N°2092/91 have to be used on an annual basis.</p> <p>The applicant shall provide :</p> <ul style="list-style-type: none"> • Information about the certification body, • A declaration stating the proportion of certified cotton used in the total production of textiles on a yearly basis <p>The competent body may request the submission of further documentation to enable it to assess whether the requirements of the standard and certification system have been fulfilled</p>	
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Discussion

The current criterion focuses on the growing of cotton using methods that minimise or eliminate pesticide use. A number of specific new measures are proposed that would comprehensively revise this criterion based on industry best practice and evidence which suggests that the environmental focus should be broadened:

- Organic cotton: It is proposed to require organic certification as the preferred compliance route;

- Better cotton: It is also proposed that Integrated Pesticide Management (IPM) techniques and water use for irrigation is addressed, hence discussion of the potential to certify through the Better Cotton Initiative, which addresses water management;
- Updating of the pesticide list: Given the proposed move to certification as the main compliance route for this criteria it is proposed that the listing of excluded pesticides is applied to the balance % of conventional cotton in Ecolabelled products and to serve as guidance for Better Cotton Initiative certification.
- Recycled cotton: The specification of recycled cotton is proposed as an alternative compliance route that would reduce the need for cultivation and reduce the landfilling of textiles.

Below we discuss the technical issues relating to each of these areas of the criterion proposal.

Organic cotton

The environmental benefits of organic cotton relate especially to the avoidance of pesticide use and the avoidance of artificial fertilisers. The use of artificial fertilisers contributes with approx. 106 kg N/ hectare, 63 kg P/hectare (P as P₂O₅) and 64 kg K/ha (K as K₂O) [Laursen et al]. Artificial fertilisers and pesticides are energy demanding to produce and also contribute to nitrous oxide emissions from soil which mean that conventional cotton also contributes more to the greenhouse effect than organic cotton.

The use of organic cotton results thus in a reduction in the emission of greenhouse gases but the major environmental benefit is avoidance of the use of pesticides which is good for both the environment and the farmers that do not have to handle the pesticides which in some areas might be carried out without sufficient protection.

The amount of organic cotton production worldwide is still very small. According to Organic Exchange the global production was less than 1% in 2009 [Organic cotton farm and fiber report 2009]. The biggest producers of organic cotton are India and Turkey and the amount of organic cotton is still increasing. This is partly due to an increasing demand from companies like H&M, Nike, Adidas, Zara and Disney [Organic Cotton press release, 2011].

The most successful labeling scheme for organic cotton is GOTS (Global Organic Textile Standard). GOTS requires a minimum content of 70% organic cotton. Its first standard was published in 2006 and it now has more than 3000 GOTS certified facilities.

During the revision in 2006-7 organic cotton was discussed which resulted in the current criterion where 3% organic cotton is required. This was a compromise that was decided because most participants wanted a criterion that required organic cotton but most participants agreed that 100% organic cotton was too hard and would exclude too many products.

Some stakeholders wanted each product made of cotton to contain 3% organic cotton. Others argued that this would be very complicated for the license holders and would make it much more complicated. It was hence decided to demand a minimum of 3% organic cotton as an annual average. This criterion has later turned out to be rather challenging to administrate for both license holders and competent bodies.

Since the last revision GOTS has become much more common which has resulted in a boost in the quantity of textiles with organic cotton. However, whilst GOTS has a minimum organic content requirement of 70% the required % for the Ecolabel will need to be determined based on current EU product best practice and taking into account any market constraints to the availability of organic cotton to the EU.

Reducing pesticide use

Cotton is a crop that, as highlighted by the preliminary report's technical analysis, normally requires large quantities of pesticides. It uses approximately 2.5% of the world's cultivated land yet uses 16% of the world's insecticides, more than any other single major crop [EJF. (2007)]. A study in USA has concluded that the application of pesticides to cotton crops is 3 to 5 times greater per hectare than the application of pesticides to corn in the humid areas of USA [U.S. Geological Survey]

The current list of excluded pesticides has been unchanged since the criteria version from 2002. The list was adopted from the PIC Procedure which is derived from the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade . This procedure has been accepted by more than 120 member nations of UNEP and FAO

Endrin is the only pesticide in this criterion that is not mentioned in the PIC procedure but endrin is an organochloride that has not been used in cotton production in many years. It has been banned in USA since 1986.

Identifying possible additional pesticides using the PIC procedure

The PIC procedure helps participating countries learn more about the characteristics of potentially hazardous chemicals that may be shipped to them, initiates a decision-making process on the future import of these chemicals by the importing countries themselves, facilitates the dissemination of this decision to other countries, and encourages exporting countries to take measures to ensure that unwanted exports do not occur.

The PIC procedure was adopted at the Rotterdam Convention in 1998. The PIC procedure is voluntary - it has been unanimously accepted by member countries to the FAO (Food and Agricultural Organisation of the UN) and UNEP and is supported by the leading chemical industry associations and a variety of non-governmental organisations.

Pesticides, industrial and consumer chemicals that have been banned or severely restricted for health or environmental reasons by the participating governments can be included in the procedure. In addition acutely toxic pesticide formulations, which may present a hazard under the conditions of use in developing countries, may also be included.

In December 2011 the Annex III of the Rotterdam Convention consisted of 43 chemicals of which 32 are pesticides. The listing from Annex III is presented in table below. The remaining 11 chemicals that are not pesticides are industrial chemicals that are not relevant in this report.

Table 3.1 Pesticides from Annex III from the PIC procedure [PIC]

Aldrin	Methyl-parathion
Captafol	Parathion
Chlordane	Phosphamidon
DDT	Alachlor
Dieldrin	Aldicarb
Heptachlor	Binapacryl
Hexachlorobenzene	Dinitro-ortho-cresol (DNOC) and its salts
HCH (mixed isomers)	EDB (1,2-dibromoethane)
2,4,5-T and its salts and esters	Endosulfan
Chlordimeform	Ethylene dichloride
Chlorobenzilate	Ethylene oxide
Dinoseb and its salts and esters	Fluoroacetamide
Monocrotophos	Lindane (gamma-HCH)
Pentachlorophenol and its salts and esters	Mercury compounds
Toxaphene (Camphechlor)	Tributyl tin compounds
Methamidophos	combination of benomyl, carbofuran and thiram

The existing criterion for cotton includes 19 of the 32 pesticides listed on the current PIC-list. Hexachlorocyclohexane (total isomers) in the criterion covers both HCH (mixed isomers) and Lindane (gamma-HCH) on the PIC list. The remaining 13 pesticides from the PIC-list that are not covered by the current criteria document are:

Alachlor, Aldicarb, Binapacryl, Dinitro-ortho-cresol (DNOC) and its salts, EDB (1,2-dibromoethane), Endosulfan, Ethylene dichloride, Ethylene oxide, Fluoroacetamide, Mercury compounds, Tributyl tin compounds, combination of benomyl, carbofuran and thiram.

Of these, four are used mainly for warehouse fumigation. These are 1,2-dibromoethane (EDB), ethylene dichloride, ethylene oxide and fluoroacetamid. For warehouse fumigation, the use of these substances is often a part of a deferring procedure and seems difficult to substitute. Furthermore the use of the fumigations is not directly linked to the production or handling of eco labelled textiles. For this reason we propose that these four substances should be removed from the criterion.

Mercury compounds are normally used for seed treatment. However, some mercury compounds have also been used for aerial spraying against aphids and cotton mites, (The Merck Index [Hayes, 1982]). The references to the use for aerial spraying are however very old, and there is no indication of current use for this purpose. The cost of performing the relevant tests for mercury and its compounds is quite high since a separate test is needed. For these reasons mercury and its compounds are not proposed for this criterion.

Tributyltin compounds have been used in anti-fouling ship paints but have been banned in most countries and have been substituted. It can also be used for conservation purposes but this function is already regulated by the criterion 11 concerning biocides. For these reasons tributyl compounds are not proposed for this criterion.

The remaining pesticides from the PIC procedure: Alachlor, Aldicarb, Binapacryl, Dinitro-ortho-cresol (DNOC) and its salts, Endosulfan, and combination of benomyl, carbofuran and thiram could all be candidates for extension of the criterion. However, it has to be discussed if all of these substances are necessary to have in the criterion based on their relevance to cotton growing.

Managing water consumption for irrigation

The water consumption of cotton production has been raised as an issue because heavy irrigation is sometimes needed. According to FAO cotton requires 700 to 1300 mm to meet its requirements and the highest water demand is during the flowering period when the leaf area is at its maximum.

Water is added to the crops by both natural sources (rainfall) and artificially (irrigation). The proportion between the two types of sources depends on the time of year and on where the cotton grows. In Egypt the crop water requirement is 1009 mm and almost all is added by irrigation systems whereas in USA the requirement is 516 mm of which 311 mm is from rainfall and irrigation only contributes with 205 mm [Value of Water Research Report Series No. 18. 2005].

Setting requirements for the amount or method of irrigation could possibly reduce the water used but this would require co-operation with the farmers. For conventional cotton it is normally very difficult to trace the cotton back to the individual farmers since the traceability is lost through cotton merchants, ginneries and spinners.

Examples of schemes that try to reduce the amount of water used to irrigation are BCI (Better Cotton Initiative) which works closely with the farmers in order to help them use less pesticide and water and Helvetas Swiss Intercooperation who have published a guideline called *Irrigation and soil conservation Innovations* that describes how irrigation systems can be improved.

Better Cotton Initiative (BCI)

Better Cotton Initiative was established in 2005 and aims to promote measurable improvements in the key environmental and social impacts of cotton cultivation worldwide to make it more economically, environmentally, and socially sustainable.

The Better Cotton Initiative (BCI) is a voluntary program whose vision is to enable of farmers around the world to grow cotton in a way that is healthier for the farming communities and the environment, and more economical.

BCI encourages the adoption of better management practices in cotton cultivation such as Integrated Pesticide Management (IPM) to achieve measurable reductions in key environmental impacts, while improving social and economic benefits for cotton farmers, small and large, worldwide. These practices include the management of water use. It is not a requirement that the cotton is organic.

The reliability and probity of BCI verification routes is to be further investigated in order to ensure that this option is able to guarantee environmental improvements are achieved.

Recycled cotton

Recycled cotton is normally defined as cotton made from textile remnants in production. These are ground into fibre, spun into new yarns and woven into new fabrics. New recovery processes are also being developed that enable a higher quality of recycled fibre to be produced.

There is a standard certifying recycled cotton. This standard Global Recycling Standard was developed by Control Union Certifications but since 2011 the standard is owned by Textile Exchange (formally Organic Exchange).

Fairtrade Cotton

Fairtrade is a scheme that primarily ensures the farmers a higher price for the cotton but they also have requirements which apply to part of the production banning the most harmful pesticide and substances. It is claimed that better trading conditions can in turn facilitate more sustainable management practices. The extent to which Fairtrade may be a certification option that delivers environmental improvements is to be further investigated. That is why Fairtrade cotton is not proposed in the criterion text at the moment.

Traditionally the EU Ecolabel has only had limited requirements for organic cotton with the only requirement being a test report for 20 pesticides that are known as being very harmful. Other schemes like GOTS and the Nordic Swan requires organic cotton but at the last revision in 2006-7 it was decided that it was not the time for the Ecolabel also to have such a criterion.

Since then especially GOTS have had very big success when marketing themselves as the global organic standard with more than 3000 certified facilities. It is therefore proposed that the EU Ecolabel also requires 100% organic cotton when cotton is used.

This might be problematic for some license holders who do not want to market organic but the environmental benefits of using organic cotton are so significant that we believe it is time for the EU Ecolabel license holders to move towards organic cotton and at a significantly higher minimum % content.

Alternately other schemes might be accepted if they also work towards sustainable cotton. Examples of this are the above described Global Recycling Standard for recycled cotton and Better Cotton Initiative (BCI). BCI is of course not approving organic cotton but their scheme encourages farmers to produce cotton with less pesticides and if possible also using less irrigation. We believe

that both these initiatives could be promoted and it is thus proposed for discussion whether cotton that has been approved by the Better Cotton Initiative would be acceptable.

Consultation questions

1. Should organic cotton become a mandatory requirement?
2. Should a mandatory percentage of organic cotton be set and if yes what percentage is feasible?
3. Should cotton grown according to other management regimes (such as IPM) or the conditions required by other certification routes (such as the Better Cotton Initiative) be encouraged by the criteria?
4. Should any other international standards be included as alternative certification routes?
5. Should the quantity of irrigation water use used for cotton production be considered within the criteria?
6. Do you agree with the scope of the proposed additions to the excluded pesticides, and should these exclusions be omitted if organic cotton becomes mandatory?

CURRENT CRITERION 3: ELASTANE

Major proposed changes	No changes currently proposed	
Present criterion, Decision 2009/567		Suggested criterion
<p>3.1. Organotin compounds shall not be used.</p> <p>Assessment and verification: The applicant shall provide a declaration of non-use.</p> <p>3.2. The emissions to air of aromatic diisocyanates during polymerisation and fibre production, measured at the process steps where they occur, including fugitive emissions as well expressed as an annual average, shall be less than 5 mg/kg of fibre produced.</p> <p>Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>		<p>3.1. Organotin compounds shall not be used.</p> <p>Assessment and verification: The applicant shall provide a declaration of non-use.</p> <p>3.2. The emissions to air of aromatic diisocyanates during polymerisation and fibre production, measured at the process steps where they occur, including fugitive emissions as well expressed as an annual average, shall be less than 5 mg/kg of fibre produced.</p> <p>Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>

Discussion

No change is currently proposed for this criterion. The wording has to be coordinated with the new proposed criterion 10 on hazardous substances.

Consultation questions:

1. Do you agree that no changes should be made to the criterion or is some form revision needed?

CURRENT CRITERION 4: FLAX AND OTHER BAST FIBRES (INCLUDING HEMP, JUTE AND RAMIE)

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • A process energy use benchmark is to be explored for the pre-treatment of flax fibres.
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>Flax and other bast fibres shall not be obtained by water retting, unless the waste water from the water retting is treated so as to reduce the COD or TOC by at least 75 % for hemp fibres and by at least 95 % for flax and the other bast fibres.</p> <p>Assessment and verification: If water retting is used, the applicant shall provide a test report, using the following test method: ISO 6060 (COD).</p>	<p>Flax and other bast fibres shall not be obtained by water retting, unless the waste water from the water retting is treated so as to reduce the COD or TOC by at least 75 % for hemp fibres and by at least 95 % for flax and the other bast fibres.</p> <p>Assessment and verification: If water retting is used, the applicant shall provide a test report, using the following test method: ISO 6060 (COD).</p>

Discussion

The energy used during the pre-treatment of flax to obtain fibres was highlighted as significant area of potential improvement in the preliminary report. The extent of the opportunity to reduce this energy use and the practicality of seeking to verify performance is to be investigated further.

<p>Consultation questions</p> <ol style="list-style-type: none"> 1. Do you agree with the proposal to consider a benchmark for process energy use associated with the pre-treatment of flax? 2. Can you provide data for the energy used during the pre-treatment of flax (MJ or kWh/kg fibre produced)?

**CURRENT CRITERION 5: GREASY WOOL AND OTHER KERATIN FIBRES
(INCLUDING WOOL FROM SHEEP, CAMEL, ALPACA, GOAT)**

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • Compliance can now be documented by using organic wool for a minimum of xx%. • Waste water criteria to be harmonised with criterion 27 and removed from this criterion. • Testing frequency to be reviewed/updated
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>

5.1 The sum total content of the following substances shall not exceed 0.5 ppm :

γ-hexachlorocyclohexane (lindane), α-hexachlorocyclohexane, β-hexachlorocyclohexane, δ-hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT, p,p'-DDD.

5.2 The sum total content of the following substances shall not exceed 2 ppm:

diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyriphos, fenclorphos.

5.3 The sum total content of the following substances shall not exceed 0.5 ppm:

cypermethrin, deltamethrin, fenvalerate, cyhalothrin, flumethrin.

5.4 The sum total content of the following substances shall not exceed 2 ppm:

diflubenzuron, triflumuron, dicyclanil-

5.1. The sum total content of the following substances shall not exceed 0,5 ppm:

γ-hexachlorocyclohexane (lindane), α-hexachlorocyclohexane, β-hexachlorocyclohexane, δ-hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT, p,p'-DDD.

5.2. The sum total content of the following substances shall not exceed 2 ppm:

diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyriphos, fenclorphosq, ethion, pirimphos-methyl.

5.3. The sum total content of the following substances shall not exceed 0,5 ppm:

cypermethrin, deltamethrin, fenvalerate, cyhalothrin, flumethrin.

5.4. The sum total content of the following substances shall not exceed 2ppm:

diflubenzuron, triflumuron, dicyclanil.

The test should be made on raw wool, before it comes through any wet treatment, two times a year if more than two lots of wool per year are received .

These requirements (as detailed in (a), (b), (c) and (d) and taken separately) do not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75% of the wool or keratin fibres in question, together with a declaration from these farmers that the substances listed above have not been applied to the fields or animals concerned.

Assessment and verification for (a), (b), (c) and (d): The applicant shall either provide the documentation indicated above or provide a test report, using the following test method: IWTO Draft Test Method 59.

5.5 After treating the scouring effluent, the final COD discharge shall not exceed 5 g/kg greasy wool on site and 10g/kg for off site. The pH of the effluent discharged to surface waters shall be between 6 and 9 (unless the pH of the receiving waters is outside this range), and the temperature shall be below 40°C (unless the temperature of the receiving water is above this value).

Assessment and verification: The applicant shall provide relevant data and test report, using the following test method: ISO 6060.

The test should be made on raw wool, before it comes through any wet treatment, for each lot of wool or two times a year if more than two lots of wool per year are received.

These requirements (as detailed in points 5.1, 5.2, 5.3 and 5.4) and taken separately) do not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75 % of the wool or keratin fibres in question, together with a declaration from these farmers that the substances listed above have not been applied to the fields or animals concerned.

These requirements (as detailed in points 5.1, 5.2, 5.3 and 5.4) and taken separately) do not apply to wool content that is organically produced wool or transitional wool, that is to say certified by an independent organisation to have been produced in conformity with the production and inspection requirements laid down in Council Regulation (EC) No 834/2007 .

Where at least 95 % of the wool in one product is organic, that is to say certified by an independent organisation to have been produced in conformity with the production and inspection requirements laid down in Regulation (EC) No 834/2007 the applicant may place the mention 'organic wool next to the Ecolabel. Where between 70 % and 95 % of the wool in one product is organic, it may be labelled 'made with xy % organic wool.

Assessment and verification for points 5.1, 5.2, 5.3 and 5.4: The applicant shall either provide

the documentation indicated above or provide a test report, using the following test method: IWTO Draft Test Method 59.

Discussion

The current criteria for pesticides (5.1 to 5.4) were discussed thoroughly during the latest revision in 2006-7. The criteria were commented on by several competent bodies and other stakeholders and were revised accordingly to the incoming suggestions and to the recommendations from BREF Textiles [BREF Textiles, 2003]. The latter document was published in 2003 and has not been revised since then.

Commercially produced wool uses large amounts of pesticides often described as *ectoparasiticides* that help farmers manage external parasites on ruminants. Ectoparasiticides have important implications for the discharge of raw wool scouring effluent and disposal of the sludge generated by the treatment of the effluent. Energy and chemical use associated with wool scouring were identified as a significant area for environmental improvement by the technical analysis. Different types of ectoparasiticides are used:

- Organochlorides
- Organophosphorous
- Pyrethroids
- Insect growth regulators

Ectoparasiticides are often applied to the sheep through sheep dipping where the animals walk through pools with liquid solutions of insecticide and fungicide.

As we highlighted in the preliminary report some leading outdoor companies claim to sell 'chlorine-free' and AOX free wool. This implies the use of substitute ectoparasiticides to treat wool. The nature of wool treatments used for these garments and their availability in the market is therefore to be investigated further.

Testing frequency

The EU Ecolabel already has strict requirements for the amounts of ectoparasiticides in the raw wool. Before the 2009 version of the criteria it was not specified how often the wool should be tested for the specified pesticides which meant that license holders in some cases only submitted a

test report when they applied for a license but not continually through the lifetime of the license. The criterion was hence changed in 2009 in such way that tests should be conducted on “each lot of wool or two times a year if more than two lots of wool per year are received”.

This criterion has been commented on by a stakeholder who has pointed out some difficulties with this criterion:

A wool scour receives several hundred processing lots of wool per year. An interpretation of the foregoing statement is that the scour requires only 2 processing consignments of wool to meet the EU eco-label requirements per year. In this case the scour will source these lots in early January and the scour will process normal wool from the auction system thereafter. This will not meet the environmental protection goals of the eco-label. Unfortunately, this is the interpretation that is possible under the heading of Manufacturer's Declaration (2-5) in the Danish User manual.

A clarification of the criterion is therefore considered necessary.

Scouring effluent treatment

The criterion for scouring effluent was discussed intensely at the last EUEB meetings in Brussels in 2009 just before the criteria were decided. As a result of this the values for COD in the waste water are quite different depending on if the effluent is treated on-site or off-site:

- For effluent treated on-site the criterion is: the COD discharged to surface waters shall not exceed 45 g/kg greasy wool
- For effluent treated off-site the criterion is: the COD discharged to sewer shall not exceed 60 g/kg greasy wool, and the effluent shall be treated off-site so as to achieve at least a further 75 % reduction of COD content

This mean that the final COD in effluent treated off-site must not exceed 15 g/kg. This fact means that the final COD level in effluent treated on-site can be three times larger than COD in effluent treated on-site which may seem unfair. In areas on New Zealand very few scouring plants have their own waste water treatment plants and the effluent is therefore treated off-site and it is understood that only very efficient waste water treatment plants can achieve greater than a 75% COD reduction.

A single COD value of 20 g/kg treated wool no matter where and how the effluent is treated has been suggested by stakeholders. If this value is decided it will be the same criterion as in criterion

27 so for practical reasons there could just be a reference to this criterion. Regional differences in how wastewater is treated must however be investigated before a final value can be proposed.

Organic wool

Production of organic wool is increasing since organic wool is becoming more and more popular. 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 demands organic wool. The criterion could, on the other hand, be expanded to encourage certified organic wool production.

Consultation questions

1. Should the criterion include a minimum % organic wool content?
2. Would a COD value of 20 g/kg for all forms of effluent treatment be achievable?
3. Do you agree with cross referencing the resulting COD value to Criteria 27?
4. Should the criteria be expanded to encourage organic wool and if so what % content?
5. Can you provide any information on 'chlorine free' wool – its performance and availability?

CURRENT CRITERION 6 : MAN-MADE CELLULOSE FIBRES (INCLUDING VISCOSE, LYOCELL, ACETATE, CUPRO, TRIACETATE)

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • Substantial reduction in AOX level associated with the fibre production • A process energy use benchmark is to be discussed • Certification of xx% responsible sourcing of cellulose pulp feedstock. For forestry and plantations FSC and PEFC are proposed as the compliance routes.
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>(a) The level of AOX in the fibres shall not exceed 250 ppm.</p> <p>Assessment and verification: The applicant shall provide a test report, using the following test method: ISO 11480.97 (controlled combustion and microcoulometry).</p> <p>(b) For viscose fibres, the sulphur content of the emissions of sulphur compounds to air from the processing during fibre production, expressed as an annual average, shall not exceed 120 g/kg filament fibre produced and 30 g/kg staple fibre produced. Where both types of fibre are produced on a given site, the overall emissions must not exceed the corresponding weighted average.</p> <p>Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>	<p>(a) The level of AOX in the fibres shall not exceed 100 ppm.</p> <p>Assessment and verification: The applicant shall provide a test report, using the following test method: ISO 11480.97 (controlled combustion and microcoulometry).</p> <p>(b) For viscose fibres, the sulphur content of the emissions of sulphur compounds to air from the processing during fibre production, expressed as an annual average, shall not exceed</p> <ul style="list-style-type: none"> - 30 g/kg staple fibre produced -120 g/kg filament fibre produced (integrated washing) - 60 g/kg filament fibre produced (batch washing) <p>Where both types of fibre are produced on a given site, the overall emissions must not exceed the corresponding weighted average.</p>

(c) For viscose fibres, the emission to water of zinc from the production site, expressed as an annual average, shall not exceed 0.3 g/kg.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

(d) For cupro fibres, the copper content of the effluent water leaving the site, expressed as an annual average, shall not exceed 0.1 ppm.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

(c) For viscose fibres, the emission to water of zinc from the production site, expressed as an annual average, shall not exceed 0.3 g/kg.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

(d) For cupro fibres, the copper content of the effluent water leaving the site, expressed as an annual average, shall not exceed 0.1 ppm.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

(e) A minimum of xx% virgin fibres shall be covered by valid sustainable forestry management and chain of custody certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent.

If the product or product line includes uncertified material, proof should be provided that the uncertified material is

	<p>less than xx % 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.</p> <p>Assessment and verification: the applicant shall provide appropriate documentation indicating the types, quantities and origins of virgin fibres used in the production.</p>
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Discussion

Viscose fibres are made from regenerated cellulose. This cellulose may be derived from a range of different sources, including timber and bamboo pulp. In the last decade production of viscose fibres has stabilised at approximately 2.6 million tonnes world-wide (Europe : 600 thousand tons). [EU Ecolabel, 2007].

Pulp is a commodity product and may be produced and blended from a range of sources. Benchmarking of global pulp mills suggests that pulp production technology varies considerably in the amount of energy used and the quantity and nature of the emissions to air and water [EKONO 2007]. Pulp feedstock, pulp liquors and process solvents have been associated with deforestation and water pollution in developing countries.

AOX levels in fiber

In the last revision it was discussed if point (a) could be removed. According to the "Environmental Assessment of Textiles" elaborated in 1997 by the Danish Environment Protection Agency, there are no reasons to have emission of AOX during the production of viscose. Only chlorinated bleaching can generate this type of emission. The proposal was to delete the reference to AOX in this criterion. But the representative body of the European man-made fibre industry, said that the sentence "the level of AOX in the fibres shall not exceed 250 ppm" should be kept, because the AOX not only depends on bleaching during the production of the fibres (and in the follow up during fabric finishing), but also from the process conditions of the cellulosic raw material. [EU Ecolabel, 2007]. It is possible that a distinguishment could be made between the production of pulp and the

production of viscose fibres. Benchmarking of pulp mill performance suggests that the AOX level could be reduced to below 100 ppm [EKONO 2007].

Sulphur emissions to air

The toxicity of carbon disulphide emissions from viscose production was highlighted by the LCA findings in the preliminary report. Data from BREF [IPPC Polymers, 2006] provide the following data for emissions of Sulphur to air:

- Fiber production: 12,5 – 30 kg/t
- Filament production (with integrated washing): 170 – 210 kg/t
- Filament production (batch washing): 40-60 kg/t

This indicates that the limit for filament production should be split into 2 separate limits. Today batch washing can very easily perform better than these limits whereas integrated washing will have great difficulty passing. The predominance of these different forms of production is to be investigated further. Also it should be considered if there is also any correlation with performance against the proposed energy and AOX benchmarks.

Emissions to water of zinc

Zinc can be eliminated by leading the waste water through two-stage neutralization, where the pH is raised from 4 to 10 by lime milk. According to the BREF this technique is “generally applicable” [IPPC Polymers, 2006]. The BAT would be to achieve 1,5 mg/l Zn. The BAT for sensitive waterbodies would be to achieve 0,3 mg/l Zn.

This means that the present limit value is equal to BAT for sensitive waterbodies. It is therefore recommended to keep the value but to change the unit from g/kg to g/l as stated in BREF.

Copper content of effluent water

This criterion has not been changed in the last 2 versions. No reference is made in the BREF and since the criteria has not been challenged or commented on it is suggested to keep the criteria as it is.

[IPPC Polymers, 2006] Integrated pollution prevention and control, Reference documents on the Best available technology for polymers, October 2006, JRS European Commission.

Process energy consumption

The preliminary report discussed the energy intensity of viscose production, with a benchmark of consumed primary energy data suggested as being 196 MJ/kg of fibre [EDIPTEx 2007]. This figure requires further corroboration as it is significantly higher than the data for synthetic fibres (see table 3.16) and the BREF for polymers suggests a range of 26.1 – 33.2 MJ/kg of fibre. It is to be verified which process stages are included in the EDIPTEx dataset and whether the figure includes the energy value of the finished product itself.

Further investigation of energy benchmarks for man-made cellulose fibres is therefore required in order to determine a figure and to identify if there are variations in process energy use for other forms of cellulose fibre production.

Pulp feedstock sourcing

With the shift of viscose production to countries such as China concerns have risen about the possible extent of deforestation in order to supply cellulose pulp feedstock. Whilst the use of raw material from forestry was highlighted by the preliminary report the issue of deforestation will not have been identified by the LCA findings as it is locally specific.

In other sectors such as construction the responsible sourcing of timber has been successfully regulated by certification schemes such as FSC which set requirements for the sustainable management of forestry and require third party verification of the chain of custody for timber products.

It is therefore proposed that a requirement for evidence of responsible sourcing is introduced for viscose fibres. Comparisons suggest that the FSC and PEFC certification schemes provide the highest level of probability in their requirements and management of the chain of custody in order to provide third party verification for this Ecolabel criteria. It is to be investigated whether certification can be obtained for bamboo plantations.

Consultation questions

1. Do you agree with a reduction in the AOX level for pulp production, and is the proposed level achievable or should it be even lower?
2. Could the sulphur standard be simplified to a tighter requirement based on the BAT for fibre production?
3. Do you agree with retaining the current criteria for zinc and copper? Is there evidence that they could be improved?
4. Should a new criterion requiring a benchmark performance for process energy use be introduced and, if so, in what form and at what level? Would this be easily verifiable?
5. Should a new criteria requiring responsible sourcing of feedstock be introduced, and if so are the proposed certifications suitable?
6. Can bamboo plantations be certified FSC/PEFC?

CURRENT CRITERION 7: POLYAMIDE

Major proposed changes	<ul style="list-style-type: none"> • Emission limit of N₂O is lowered for PA66 fibre • Minimum xx% recycled content or a process energy benchmark of x.x MJ/kg of polyester fibre
Present criterion, Decision 2009/567	Suggested criterion
<p>The emissions to air of N₂O during monomer production, expressed as an annual average, shall not exceed 10 g/kg polyamide 6 fibre produced and 50 g/kg polyamide 6.6 produced.</p> <p>Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>	<p>a) The emissions to air of N₂O during monomer production, expressed as an annual average, shall not exceed:</p> <ul style="list-style-type: none"> - 10 g/kg polyamide 6 fibre produced - 16,5 g/kg polyamide 6.6 produced. <p>b) . The energy consumption in the production of fibre must not exceed xx MJ/kg resin. Alternative the fibre shall consist of min xx % recycled material</p> <p>Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>

Emissions to air of N₂O

Nitrous oxide is a significant greenhouse gas and is emitted during the polyamide (nylon) production process. According to [Boustead, 2000] the “process” air emissions of N₂O in the production of Nylon 6 polymer are calculated to be 8.6 g / kg polymer (“when all production sequences are traced back to the extraction of raw materials from the earth”) [EU Ecolabel, 2002].

CIRFS reports that 3 different factories in Europe emit 50, 50 and 196 g/kg and suggests a limit of 50 g/kg. This limit was discussed at the AHWG meeting on December 3, 2001, and the meeting was predominantly in favour of this limit [EU Ecolabel, 2002].

The Blaue Engel has differentiated the limit for N₂O between polyamide 6 and polyamide 6.6. The associated limits are:

- Polyamide 6: 10 g/kg
- Polyamide 6.6 16,5 g/kg.

The question is therefore whether the criterion for polyamide 6.6 should be harmonized with the stricter requirements of the Blaue Engel. The distinguishment between energy consumed in the production process and whole life emissions upstream of nylon production is to be further investigated and clarified.

Process energy consumption

The Preliminary Report highlighted the significance of energy consumption associated with nylon production. Process energy consumption in the production of polyamide fibres was benchmarked by the BREF for polymers [IPPC Polymers, 2006] and by Plastics Europe for feedstocks as part of their Ecoprofiles collection. For nylon 6 the BREF suggests benchmarks of 6.500 – 7.000 MJ/tonne for continuous processes and 9.500 – 10.000 MJ/tonne for batch processes. The Plastics Europe benchmarks do not appear to be directly comparable with the BREF benchmarks. Further consultation with industry is therefore required in order to confirm representative benchmark figures, to discuss their appropriateness and to identify an appropriate methodology for their verification.

Table 3.1 Process energy benchmarks for polyamide 6 and 6.6 fibre production [IPPC Polymers (2006)]

	PA 6 (MJ/tonne production)				PA 66 (MJ/tonne production)			
	Continuous process		Batch process		Continuous process		Batch process	
Total process energy	6,500	7,000	9,500	10,000	5,700	7,500	5,050	7,250

Table 3.2 Process energy data benchmarks for polymer production [Plastics Europe]

Material	Total average energy consumed to produce 1 kg material	Reference/comments
Polyamide 6 (nylon 6)	66.12 MJ	PlasticsEurope 2005a,
Polyamide 6.6 (nylon 6.6)	64.51 MJ	PlasticsEurope 2005a,

Minimum recycled content

The preliminary report highlighted evidence for the manufacturing and use in textile products of nylon with pre and post consumer waste nylon content. It also understood that nylon 6.6 is, at the moment, technically more difficult to recycle. The industry state of the art and the whole life environmental benefits of recycled nylon are to be investigated further.

Consultation questions

1. Is a reduction in the N₂O criteria for nylon 6.6 achievable and if so at what level should it be set?
2. Should a new criteria requiring a benchmark performance for process energy use be introduced and if so in what form and at what level? Is this easily verifiable?
3. Should a new criterion requiring a benchmark performance for process energy use be introduced and, if so, in what form and at what level? Would this be easily verifiable?
4. What is the current industry state of the art in nylon fibre recycled content, is it readily available and is it suitable as a substitute for virgin nylon?

CURRENT CRITERION 8: POLYESTER

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • A reduction in the threshold level for VOC emissions • For parts a) and b) the assessment and verification is suggested only to be a declaration • Minimum xx% recycled content or a process energy benchmark of x.x MJ/kg of polyester fibre
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>(a) The amount of antimony in the polyester fibres shall not exceed 260 ppm. Where no antimony is used, the applicant may state 'antimony free' (or equivalent text) next to the eco-label.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration of non-use or a test report using the following test method: direct determination by Atomic Absorption Spectrometry. The test shall be carried out on the raw fibre prior to any wet processing.</p> <p>(b) The emissions of VOCs during polymerisation and fibre production of polyester, measured at the process steps where they occur, including fugitive emissions as well, expressed as an annual average, shall not exceed 1.2 g/kg of produced polyester resin. (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).</p>	<p>(a) The amount of antimony in the polyester fibres shall not exceed 260 ppm. Where no antimony is used, the applicant may state 'antimony free' (or equivalent text) next to the eco-label.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration of non-use or a test report using the following test method: direct determination by Atomic Absorption Spectrometry. The test shall be carried out on the raw fibre prior to any wet processing.</p> <p>(b) The emissions of VOCs during polymerisation and fibre production of polyester, measured at the process steps where they occur, including fugitive emissions as well, expressed as an annual average, shall not exceed xx g/tonne of produced polyester resin. (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).</p>

<p><i>Assessment and verification:</i> The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>	<p>(c) The energy consumption in the production of fibre must not exceed xx MJ/kg resin. Alternative the fibre shall consist of min xx % recycled material</p> <p><i>Assessment and verification:</i> For a) and b) the applicant shall provide a declaration of compliance. For c) the applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</p>
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Residual antimony content

There are many different types of polyester, but the type most often produced for use in textiles is polyethylene terephthalate, abbreviated PET. Used in a fabric, it is most often referred to as “polyester” or “poly”.

PET production is based on the use of catalysts such as antimony oxides or antimony acetate. Antimony is therefore present as a residue in polyester. The antimony content in commercial polyester fibres is cited to be in the range of 200 to 300 ppm [K. Lacasse]. *No change to the current criteria is currently therefore proposed.*

Process VOC emissions

BREF lists the BAT value for unsaturated polyester in the range 40 – 100 g/t saleable product [IPPC Polymers, 2006]. This suggests that the criterion threshold could be reduced. The extent to which this can be reduced is to be investigated further.

Process energy consumption

The Preliminary Report highlighted the significance of energy consumption associated with polyester production. Taken from the BREF the maximum level of process energy use is 5.8 GJ/tonne. Good industrial practice is 3,5 GJ/t of saleable product. BAT is listed as 2 – 3.5 GJ/tonne

unsaturated polyester. Plastics Europe have also produced benchmark figures for feedstock production which do not directly correlate with the BREF benchmarks.

Further consultation with industry is therefore required in order to confirm representative benchmark figures, to discuss their appropriateness and to identify an appropriate methodology for their verification.

Table 3.3 Process energy benchmark for polymer production

PET (amorphous) – polyester	44.4 MJ/kg resin	PlasticsEurope 2011b, data are also available from 1999 and 2005.
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Minimum recycled content

Polyester is the synthetic fibre with the greatest market share and is the most widely recycled polymer. The preliminary report highlighted evidence for the significant environmental benefits of polyester recycling. Further consultation is required in order to set a minimum recycled content figure based on market best practice.

Consultation questions

1. Is a further reduction in process VOC emissions achievable and if so at what level should it be set?
2. Should a new criterion requiring a benchmark performance for process energy use be introduced and, if so, in what form and at what level? Would this be easily verifiable?
3. Should a new criteria requiring a minimum recycled content be introduced and if so what % would be achievable?

CURRENT CRITERION 9: POLYPROPYLENE

Major proposed changes	<ul style="list-style-type: none"> • Minimum xx% recycled content or a process energy benchmark of x.x MJ/kg of polypropylene fibre
Present criterion, Decision 2009/567	Suggested criterion
<p>Lead based pigments shall not be used.</p> <p>Assessment and verification: The applicant shall provide a declaration of non-use.</p>	<p>(a) Lead based pigments shall not be used.</p> <p>Assessment and verification: The applicant shall provide a declaration of non-use.</p> <p>(b) The energy consumption in the production of fibre must not exceed xx MJ/kg resin. Alternatively the fibre shall consist of a minimum xx % recycled material.</p> <p><i>Assessment and verification: For a) and b) the applicant shall provide a declaration of compliance. For c) the applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.</i></p>

Process energy consumption

It is suggest to include a criterion for process energy consumption or the content of reused material. These points were identified as being important areas of potential environmental improvement in the preliminary report. Process energy benchmarks published by Plastics Europe were presented and discussed in section 3.3.2 of the preliminary report. However, these benchmarks only address feedstock production.

Table 3.4 Process energy benchmark for polymer production

Polypropylene (resin)	14.74 MJ	PlasticsEurope 2005c, data are also available for 1999
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Minimum recycled content

Further evidence is required as to the environmental benefits of polypropylene recycling to produce textile fibres and as to its technical viability and market acceptability as an option.

Consultation questions

1. Should a new criterion requiring a benchmark performance for process energy use be introduced and, if so, in what form and at what level? Would this be easily verifiable?
2. Should a new criteria requiring a minimum recycled content be introduced and if so what % would be achievable?

DRAFT

3.2 Chemicals and process criteria

PROPOSED NEW CRITERION 10: HAZARDOUS SUBSTANCES AND MIXTURES

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • New criteria which restrict the use of substances that appear on the REACH Candidate List and/or which carry specific risk and hazard phrases
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>Not specifically covered</p>	<p>In accordance with Article 6(6) of Regulation (EC) No 66/2010 on the EU Ecolabel, the product or any component of it shall not contain substances that:</p> <ul style="list-style-type: none"> • Are referred to in Article 57 of Regulation (EC) No 1907/2006 and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) • Have been identified according to the procedure described in Article 59(1) which establishes the Candidate List for Substances of Very High Concern • Meet the criteria for classification as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR) in accordance with Regulation (EC) No 1272/2008 or Directive 67/548/EC and as interpreted according to the hazard statements and risk listed under this criterion <p>The hazard classes and risk phrases listed below generally apply to substances. However, where information on substances cannot be obtained, the classification rules for mixtures shall be applied.</p> <p>The use of substances or mixtures which change their properties upon processing (e.g., become no longer bioavailable, undergo chemical modification) so that the identified hazard no longer applies are exempted from the above requirement.</p>

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, and are present in mixtures, in an article or in any homogeneous part of a complex article in concentrations higher than 0,1 % (weight by weight).

Note that this criterion also applies to known degradation products such as formaldehyde from formaldehyde releasers.

List of hazard statements and risk phrases:

Hazard Statement ¹	Risk Phrase ²
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	R27
H311 Toxic in contact with skin	R24
H330 Fatal if inhaled	R23/26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R46
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	R60/61/60-61
	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	R62-63

	the unborn child.	
	H362 May cause harm to breast fed children	R64
	H370 Causes damage to organs	R39/23/24/25/26/27/28
	H371 May cause damage to organs	R68/20/21/22
	H372 Causes damage to organs	R48/25/24/23
	H373 May cause damage to organs	R48/20/21/22
	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 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
		Sensitising substances	
		H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	R42
		H317: May cause allergic skin reaction	R43
		<p>Assessment and verification: The applicant shall provide a declaration of compliance with this criterion, together with related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets 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 mixtures.</p>	

	<p>¹ Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006</p> <p>² Directive 67/548/EEC with adjustment to REACH according to Directive 2006/121/EC and Directive 1999/45/EC as amended</p>
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Discussion

The requirement relating to hazardous substances is set out in the EU Ecolabel Regulation. The criterion addresses the final ecolabeled product. This could be a fibre, a textile fabric or a final textile/garment and the criteria will also have implications for the production processes covered by the 'processes and chemicals criteria'.

For other product groups it has been discussed as to how such a criterion can be implemented and especially how applicants can document and verify compliance with such a criterion. For textiles it raised specific questions, such as the proportion of any restricted substances used in the production process that may end up in the final product. In the preliminary report we highlighted some of the more significant substances that are currently used by the industry. The eventual requests of derogation should be carefully evaluated in light of the real need for the substance and the environmental performance of the product without its presence.

This is also an area in which harmonisation with existing labels could assist in managing the verification process. Oeko-tex for example is based on the testing of finished products and has an extensive network of affiliated testing laboratories and competent bodies. As it can be seen from table 3.5 the main current focus of the current criteria are on processes – either in the form of substance restrictions, emissions limit values or biodegradability requirements. In contrast, articles 6(6) and 6(7) of the Ecolabel Regulation shift the focus onto the end product which would bring the Ecolabel closer in line with the testing carried out for Oeko-tex.

Table 3.5 Grouping of criteria according to the focus of their substances restrictions

Criteria that currently apply to processes	
Substance restrictions	<ul style="list-style-type: none"> 12. Stripping or depigmentation 13. Weighting 14. All chemicals and chemical preparations 16. Bleaching agents 17. Impurities in dyes: Colour matter with fibre affinity (soluble or insoluble) 18. Impurities in pigments: Colour matter with fibre affinity (soluble or insoluble) 19. Chrome mordant dyeing 20. Azo dyes 22. Dyes that are carcinogenic, mutagenic or toxic to reproduction 23. Potentially sensitising dyes 24. Halogenated carriers for polyester 25. Printing 29. Anti felting finishes 30. Fabrics finishes 31. Fillings
Wastewater or aerial emissions	<ul style="list-style-type: none"> 10. Auxiliaries 15. Detergents, fabric softeners and complexing agents 20. Metal complex dyes 27. Wastewater discharges from wet processing 31. Fillings

- 32. Coatings, laminates and membranes
- 33. Energy and water use (no specific limit values)

Criteria that currently applying to end products

Substance restrictions

- 11. Biocidal and biostatic products
- 28. Flame retardants
- 31. Fillings
- 32. Coatings, laminates and membranes

Concentration limits

- 26. Formaldehyde
- 31. Fillings

Substances restricted or requiring authorisation under REACH Annex XIV and XVII

REACH has consolidated EU processes for the classification, authorisation and restriction of substances formerly regulated by other separate pieces of international and EU legislation. These include substances controlled by the Biocide Directive 98/8 EC, the Azo dye Directive 2002/61/EC and Regulation 850/2004 on Persistent Organic Pollutants. The Water Framework Directive is also significant with respect to the regulation of effluents discharged to wastewater.

A number of substances with functions that are relevant to the textile industry are currently authorised or restricted by Annexes XIV and XVII of REACH:

- Biocides: Textiles must not contain pentachlorophenol (PCP). The import, export, sale or use of products containing 5 ppm, or above of PCP or its salts or esters is prohibited.
- Dyes: Azo dyes is the name of the group of synthetic chemicals based on nitrogen that are often used in the textile industry.
- Flame retardants: Penta- and octabromodiphenol ethers (penta and octa-BDE) Threshold limit is 0,1% (w/w). Impregnants tris (2, 3-dibromopropyl), phosphate cas. Nr. 126-72-7, (TRIS), tris (1-aziridinyl) phosphineoxide (TEPA) cas. Nr. 5455-55-1) and polybrominated biphenyls (PBB) cas. Nr. 59536-65-1 must not be used in textiles which are intended to come into contact with the skin, e.g. articles of clothing or linen.

- Surface repellents: PFOS (perflourooctane sulfonate and its derivatives) are prohibited in textiles. Special notice should be taken of the ban on textiles or other materials with a coating, if the amount of PFOS comprises 1µg/m² or more of the coated materials.

Some Azo dyes may dissociate under certain conditions to produce carcinogenic and allergenic aromatic amines. Azo dyes are restricted according to appendix 8 in REACH.

Substances that currently appear on the ECHA Candidate list

Substances that appear on the SVHC (Substances of Very High Concern) Candidate List should be excluded from Ecolabelled products if goods contain them in concentrations of less than 0.1%. The list is dynamic and is updated with new substances as candidate substances are identified, testing is carried out and evidence is brought forward. The Candidate list will therefore have changed since the last revision of the textile product Ecolabel criteria. The functional role of some of the relevant substances that currently feature on the list is understood to include:

- Auxiliaries
 - 4-(1,1,3,3-tetramethylbutyl)phenol
 - 1-Methyl-2-pyrrolidone
- Dyes and mordants
 - Anthracene (dye precursor)
 - See table 1.3 in the Preliminary Report
- Flame retardants
 - HBCD – Hexabromocyclododecane
 - TCEP – Tris (2, chloroethyl)phosphate
 - Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)
- Plasticizers (phthalates)
 - DEHP (Di-(2-ethylhexyl)-phthalate) CAS no. 117-81-7
 - BBP (Butylbenzylphthalate) CAS no. 85-68-7
 - DBP (Dibutylphthalate) CAS no. 84-74-2
 - Bis(2-methoxyethyl) phthalate
 - DIBP (Diisobutylphthalat)

- TCEP (Tris(2-chlorethyl)phosphate)

The use of substances or mixtures which change their properties upon processing (e.g., become no longer bioavailable, undergo chemical modification) so that the identified hazard no longer applies are exempted from the Article 6(6) requirement to exclude substances that appear on the Candidate List.

Substances that carry risk of hazard phrases

Given the broad range of chemical substances used by the textile industry the implication of this restriction could be significant. Industry feedback is therefore required to identify instances where derogations may be required. The pre-cautionary approach taken by labels such as Oeko-tex may also assist in understanding the typical concentrations of substances that may be found in finished products, and in seeking to harmonise testing and verification in order to reduce the burden on Competent Bodies.

Sensitising substances have been added to the list in other product groups and it is to be discussed whether allergen skin contact risk phrases should also be included: R42/H334 and R43/H317.

Consultation questions

1. How should this criterion be implemented – particularly in relation to testing and verification?
2. Should substances restrictions on the basis of the Candidate List and Risk/Hazard phrases also be applied to production processes in order to eliminate hazards at source?
3. How many additional substances currently used by the industry would be restricted by the listed Risk and Hazard phrases?
4. Should any derogation from the list be made for specific substances, fabrics, products?
5. Is it appropriate and workable to add allergen skin contact to the Risk and Hazard phrases?

CURRENT CRITERION 10: AUXILIARIES AND FINISHING AGENTS FOR FIBRES AND YARNS

Major proposed changes	No change currently proposed	
Present criterion, Decision 2009/567		Suggested criterion
<p>Size: At least 95% (by dry weight) of the component substances of any sizeing preparation applied to yarns shall be sufficiently biodegradable, or else shall be recycled.</p> <p>The sum of each component is taken into account.</p> <p><i>Assessment and verification:</i> In this context, a substance is considered as ‘sufficiently biodegradable:</p> <p>if when tested with one of the methods OECD 301 A, OECD 301 E, ISO 7827, OECD 302 A, ISO 9887, OECD 302 B, or ISO 9888 it shows a percentage degradation of at least 70 % within 28 days,</p> <p>or if when tested with one of the methods OECD 301 B, ISO 9439, OECD 301 C, OECD 302 C, OECD 301 D, ISO 10707, OECD 301 F, ISO 9408, ISO 10708 or ISO 14593 it shows a percentage degradation of at least 60% within 28 days,</p> <p>or if when tested with one of the methods OECD 303 or ISO 11733 it shows a percentage degradation of at least 80% within 28 days,</p> <p>or, for substances for which these test methods are inapplicable, if evidence of an equivalent level of biodegradation is presented.</p>		<p>Size: At least 95% (by dry weight) of the component substances of any sizeing preparation applied to yarns shall be sufficiently biodegradable, or else shall be recycled.</p> <p>The sum of each component is taken into account.</p> <p><i>Assessment and verification:</i> In this context, a substance is considered as ‘sufficiently biodegradable:</p> <p>if when tested with one of the methods OECD 301 A, OECD 301 E, ISO 7827, OECD 302 A, ISO 9887, OECD 302 B, or ISO 9888 it shows a percentage degradation of at least 70 % within 28 days,</p> <p>or if when tested with one of the methods OECD 301 B, ISO 9439, OECD 301 C, OECD 302 C, OECD 301 D, ISO 10707, OECD 301 F, ISO 9408, ISO 10708 or ISO 14593 it shows a percentage degradation of at least 60% within 28 days,</p> <p>or if when tested with one of the methods OECD 303 or ISO 11733 it shows a percentage degradation of at least 80% within 28 days,</p> <p>or, for substances for which these test methods are inapplicable, if evidence of an equivalent level of biodegradation is presented.</p>

<p>The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all sizeing preparations used.</p> <p>(b) Spinning solution additives, spinning additives and preparation agents for primary spinning (including carding oils, spin finishes and lubricants): At least 90% (by dry weight) of the component substances shall be sufficiently biodegradable or eliminable in waste water treatment plants.</p> <p>This requirement does not apply to preparation agents for secondary spinning (spinning lubricants, conditioning agents), coning oils, warping and twisting oils, waxes, knitting oils, silicone oils and inorganic substances. The sum of each component is taken into account.</p> <p><i>Assessment and verification:</i> ‘: In this context, a substance is considered as ‘sufficiently biodegradable or eliminable in waste water treatment plants’:</p> <p>if when tested with one of the methods OECD 301 A, OECD 301 E, ISO 7827, OECD 302 A, ISO 9887, OECD 302 B, or ISO 9888 it shows a percentage degradation of at least 70 % within 28 days,</p>	<p>The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all sizeing preparations used.</p> <p>(b) Spinning solution additives, spinning additives and preparation agents for primary spinning (including carding oils, spin finishes and lubricants): At least 90% (by dry weight) of the component substances shall be sufficiently biodegradable or eliminable in waste water treatment plants.</p> <p>This requirement does not apply to preparation agents for secondary spinning (spinning lubricants, conditioning agents), coning oils, warping and twisting oils, waxes, knitting oils, silicone oils and inorganic substances. The sum of each component is taken into account.</p> <p><i>Assessment and verification:</i> ‘: In this context, a substance is considered as ‘sufficiently biodegradable or eliminable in waste water treatment plants’:</p> <p>if when tested with one of the methods OECD 301 A, OECD 301 E, ISO 7827, OECD 302 A, ISO 9887, OECD 302 B, or ISO 9888 it shows a percentage degradation of at least 70 % within 28 days,</p>
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<p>or if when tested with one of the methods OECD 301 B, ISO 9439, OECD 301 C, OECD 302 C, OECD 301 D, ISO 10707, OECD 301 F, ISO 9408, ISO 10708 or ISO 14593 it shows a percentage degradation of at least 60% within 28 days,</p> <p>or if when tested with one of the methods OECD 303 or ISO 11733 it shows a percentage degradation of at least 80% within 28 days,</p> <p>or, for substances for which these test methods are inapplicable, if evidence of an equivalent level of biodegradation or elimination is presented.</p> <p>The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all such additives or preparation agents used.</p> <p>(c) The content of polycyclic aromatic hydrocarbons (PAH) in the mineral oil proportion of a product shall be less than 3% by weight.</p> <p><i>Assessment and verification:</i> The applicant shall provide appropriate documentation, safety date sheets, product information sheets or declarations, indicating either the content of polycyclic aromatic hydrocarbons or the non-use of products containing mineral oils.</p>	<p>or if when tested with one of the methods OECD 301 B, ISO 9439, OECD 301 C, OECD 302 C, OECD 301 D, ISO 10707, OECD 301 F, ISO 9408, ISO 10708 or ISO 14593 it shows a percentage degradation of at least 60% within 28 days,</p> <p>or if when tested with one of the methods OECD 303 or ISO 11733 it shows a percentage degradation of at least 80% within 28 days,</p> <p>or, for substances for which these test methods are inapplicable, if evidence of an equivalent level of biodegradation or elimination is presented.</p> <p>The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all such additives or preparation agents used.</p> <p>(c) The content of polycyclic aromatic hydrocarbons (PAH) in the mineral oil proportion of a product shall be less than 3% by weight.</p> <p><i>Assessment and verification:</i> The applicant shall provide appropriate documentation, safety date sheets, product information sheets or declarations, indicating either the content of polycyclic aromatic hydrocarbons or the non-use of products containing mineral oils.</p>
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Discussion

The most common fibre used in ecolabelled products is cotton. Before spinning a wax is normally applied to the fibre in order to protect it against mechanical stress. This is normally a paraffin wax that is biodegradable. The products used in the mechanical processes can be divided in five main categories:

1. Sizes
2. Spinning solution additives, spinning additives and spinning bath additives
3. Preparation agents for primary spinning
4. Preparation agents for secondary spinning,
5. Coning oils, warping and twisting oils, knitting oils and silicone oils.

Category 1 - Sizes

According to the BREF [BREF Textiles, 2003] sizes are typically based on one of the following chemical groups:

- starch
- starch derivatives
- cellulose derivatives (carboxymethylcellulose, CMC)
- galactomannan derivatives
- polyvinyl alcohol (PVA)
- polymethacrylates
- polyesters.

The type and amount of size applied to the yarn depends on the fibre in question. The amount varies from 0 to 200 g/kg of yarn, giving a potential high contribution to the environmental load of the wastewater. The biodegradability of the sizes differ, starch being completely biodegradable, starch derivatives being more difficult to biodegrade, while PVA and polyesters are hardly biodegradable, but show a grade of bioelimination.

Category 2 – Spinning solution additives, spinning additives and spinning bath additives

Within this group the so-called modifiers are most relevant. They are applied for their special viscose qualities in loads of about 5 mg/kg fibres. They mainly consist of polyethylene glycol ethers with molecular weights of about 1500. During pre-treatment, more than 90% of these substances are washed off.

Category 3 – Preparation agents for primary spinning

Preparation agents are applied during the manufacture of chemical fibres, directly after the spinning process. They enable subsequent processes such as drawing, twisting, warping, texturing and further (secondary) spinning.

The preparation agents can be further divided into five main classes:

1. lubricants (slippery agents)
2. emulsifiers
3. wetting agents
4. antistatic agents
5. additives (e.g. biocides and antioxidants).

Typical applied lubricants used in the process stages from fibre to yarn manufacturing are as follows:

- highly refined mineral oils, so-called white oils (mixture of hydrocarbons with C12 – C50 chain length, having a range of boiling points between 220°C and 450°C); their use is strongly declining
- fatty acid triglycerides (refined natural oils)
- ester oils (e.g. butyl stearate, tridecyl stearate)
- EO/PO-adducts (Ethylene Oxide/Propylene Oxide (group of copolymers))
- silicones.

Mineral oils are hardly biodegradable, but easily removed by absorption. Due to their low cost, they are still widely used as lubricants.

Ester oils are used as lubricants as an alternative to mineral oils. They are increasingly being used as substitutes for mineral oils in primary spinning while, in secondary spinning, mineral oils still have the highest market share. Ester oils are usually esters of fatty acids (lauryl, stearyl acid) with fatty alcohols or polyhydroxylic alcohols. Compared to mineral oils, ester oils are more thermally stable, biodegradable and easy to emulsify.

EO/PO copolymers are used as lubricants for texturised chemical fibres because they do not interfere with the process in the same way as mineral oils do. The high molecular EO/PO-adducts (sum of EO and PO units more than 15 moles) are non- or hardly biodegradable.

Silicones are used as lubricants for elastomeric fibre (elastan). They show the highest level of COD of all lubricants and they are hardly biodegradable. An additional disadvantage is that they are difficult to emulsify and to remove from the fibre. APEO (alkyl phenol ethoxylates) have previously

been used to remove them but a quite high percentage (approximately 40 %) could remain on the fibre after washing, giving rise to air emissions in the subsequent high-temperature treatments.

Emulsifiers can be anionic and non-ionic surfactants. Wetting agents are usually short-chain alkyl phosphates. Mono- and diesters of phosphorous pentoxides are in use as anti-electrostatic agents as well as amphoteric surfactants. "Additives" cover a wide range of substances, with biocides being of most interest. They are handled separately in the criterion on biocides.

Category 4 – Preparation agents for secondary spinning

For these agents there is no clear definition. IPPC suggests a division into "conditioning agents" as a term for preparation agents for secondary spinning of synthetic fibres, the composition being similar to that of the preparation agents used for primary spinning of staple fibres and with a load of 1-5 g/kg fibres.

Category 5 – Coning, warping, twisting and knitting oils

Oils for coning, twisting and warping consist of 70-95% white oils and 5-30% non-ionic surfactants, especially fatty alcohols and fatty acid ethoxylates. The load of coning oils varies for polyester from 5-30 g/kg, for common polyamide the load is about 5 g/kg. It is reported that imported fabric can have loads of coning oils above 50 g/kg.

Consultation questions:

1. Do you agree that the criterion is still appropriate and therefore requires no revision?
2. Are there additional auxiliaries which appear on the REACH Candidate List
3. Do specific categories of auxiliaries carry listed H or R phrases?

CURRENT CRITERION 11: BIOCIDAL OR BIOSTATIC PRODUCTS

Major proposed changes	<ul style="list-style-type: none"> • Biocidal or biostatic products including nanosilver <i>and other substances to be specified</i> shall not be used.
Present criterion, Decision 2009/567	Suggested criterion
<p>a) Chlorophenols (their salts and esters), PCB and organotin compounds shall not be used during transportation or storage of products and semi-manufactured products.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use of these substances or compounds on the yarn, fabric and final product. Should this declaration be subject to verification the following test method and threshold shall be used: extraction as appropriate, derivatisation with acetic anhydride, determination by capillary gas-liquid chromatography with electron capture detection, limit value 0.05 ppm.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use.</p>	<p>a) Chlorophenols (their salts and esters), PCB and organotin compounds shall not be used during transportation or storage of products and semi-manufactured products.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use of these substances or compounds on the yarn, fabric and final product. Should this declaration be subject to verification the following test method and threshold shall be used: extraction as appropriate, derivatisation with acetic anhydride, determination by capillary gas-liquid chromatography with electron capture detection, limit value 0.05 ppm.</p> <p>b) Biocidal or biostatic products or surface treatments that contain nanosilver shall not be used.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use.</p>

Chlorophenol, PCB and organotin compounds

This part of the criteria has not been changed since 2002. Typical biocides used for conservation during transport are: methylbromide, phosphin, Prussic acid gas derived from formaldehyde, benzen, toluen, styren etc

Information from several licenseholders indicates that the use of biocides can be avoided if the transport time is less than 3 weeks. This short supply time is possible for textiles that are imported from the Far East.

Nanosilver biocidal and biostatic treatments

Silver is one of the most widely used nanoparticles in consumer products [Wijnhoven et al., 2009]. Its use in textiles and personal care products may lead to human and environmental exposures.

Nanosilver in textiles is used in all kinds of clothes from socks and shirts to caps, gloves and underwear. In all cases it is the antimicrobial activity of nano-silver that is the reason for incorporating it into textiles. Sports wear etc. labelled as "antibacterial", "free of odour" etc. have been registered to contain nanosilver or triclosan [Poulsen et al 2011]. These substances stop or reduce bacterial activity and thereby "reduce" the need for washing.

There is some limited evidence of the whole life benefits of nano-silver coatings. An LCA study carried out by scientists from the UK, Germany and Switzerland has highlighted a beneficial reduction in energy and detergent use during the use phase of garments. However, the study did note that the environmental burdens from the mining of silver may outweigh these benefits if consumer behaviour does not lead to reduced clothes washing. The study was not able to address emerging evidence of the downstream environmental impacts of the release of anti-bacterial agents.

The environmental releases of nanosilver from textiles has been investigated in some theoretical studies and a few laboratory based ones. In the study by Luoma (2008) it was estimated that mass release from silver containing socks in the USA would be in the range of 6-930 kg or 180-2790 kg assuming that 10% and 30%, respectively, of the population would use these kinds of socks.

The release of nanosilver from socks upon contact with water showed that for some socks almost all silver leached to water whereas for others no leaching was detected [Benn & Westerhoff, 2008]. [Benn et al. 2010] measured the content of silver in textiles (in a shirt, a medical mask, a towel and a cloth), personal care products (toothpaste, shampoo), a detergent, a toy (teddy bear), and two humidifiers. They found silver concentrations from 1.4 to 270,000 µg/g product⁻¹. Upon washing in tap water they estimated the potential release of silver into aqueous environmental matrices in quantities up to 45 µg/g per product.

Quantification of the extent of nanosilver application in clothing and home furnishings was not possible at this stage in the study. A manufacturer of nanosilver yarn presents the fields of application as active, casual, sports and outdoor wear, under wear and home furnishing and bedding [Everest 2010]. A request for information has been made to dominant international

suppliers of sports equipment. While some companies Nike [Nike 2010; Intersport 2010] have informed us that nanosilver is not used in sports equipment, other companies (e.g. Adidas) had not at the time of writing responded. It is also noted that the use of antibacterial agents is currently prohibited by Oeko-tex certification.

Nanosilver toxicological profile

From [Mikkelsen et al, 2011].

It has been shown that silver nanoparticles can be absorbed via all routes of exposure (oral dermal and inhalation). However, it is unclear in which form (as particles, free ions, silver ions or complexes) nanosilver is absorbed and distributed to target organs. At least for uptake via the oral route it is likely that at least some of the uptake occurs as ions. It appears that smaller particles exhibit higher toxicity as compared to larger particles; and if silver is absorbed as particles then the surface area is relevant.

Should silver uptake occur solely as ions, the already rich database for silver could be applied to assess systemic silver nanoparticle toxicity. For that exercise, it would need to be considered whether and how the dramatically increased surface area and possibly increased solubility of silver nanoparticles would need to be taken into account.

A number of studies, mainly in vitro, have shown that the main mechanism of silver nanoparticle toxicity seems to be mediated by an increase in ROS production, stimulating inflammation and genotoxic events and apoptosis or necrosis. The concentration of the administered nanoparticles is able to influence the toxicity, specifically, and at low levels of oxidative stress a protective response is initiated which progresses to a damaging response with increasing particle concentration, and therefore oxidant levels. It is thus relevant to consider the toxicity threshold of silver nanoparticles.

Silver is known to be an ecotoxic metal and tests with silver nanoparticles (AgNP) do also reveal very low effect concentrations. Thus, for algae EC50-values as low as 4 µg/l have been found and also for crustaceans values far below 1 mg/l has been reported. This ranks AgNP as very toxic towards aquatic organisms. It is also important to note that at concentrations below 1 mg/l inhibition of nitrifying bacteria can occur and thus the function of wastewater treatment plants may be affected by the presence of AgNP. Possibly significant environmental effects arising from interactions with symbiotic bacteria present in organisms and in soil have also been documented.

The environmental concentration resulting from the use of AgNP in consumer products are at present uncertain, even though a number of different estimates have been proposed. It is evident that even though silver nanoparticles are incorporated in textiles, they can be released upon

washing. Concentrations in the low ng/l range have been observed and even at such low concentrations it may constitute an environmental risk due to the high toxicity of silver.

It is debated today whether silver nanoparticles are in fact more toxic than their bulk counterpart, since effects in many cases can be ascribed to the ionic form of silver (Ag⁺). Some studies have documented a higher toxic effect from AgNP, but it is the widespread and dispersed use of silver in consumer products that poses the greatest risk to the aquatic and terrestrial environment. Even if AgNP are “only” as toxic as larger silver particles, silver is still a very ecotoxic metal. [Mikkelsen et al, 2011]

On the basis of the toxicology studies reviewed to date and the uncertainty associated with its possible environmental impacts a precautionary approach is therefore proposed for the ecolabel criteria.

Consultation questions

1. Are you aware of other biocidal products that are used in storage and transportation?
2. Do you agree with the assumption relating to transit times and avoidance of biocide treatments?
3. Is a precautionary approach to nanosilver justifiable on the basis of current evidence? Is new/additional evidence available?
4. Are you aware of other coatings or nanoparticles that should be addressed?

CURRENT CRITERION 12: STRIPPING OR DEPIGMENTATION

Major proposed changes	<ul style="list-style-type: none"> • Alternative 1: no change • Alternative 2: criterion deleted
Present criterion, Decision 2009/567	Suggested criterion
<p>Heavy metal salts (except of iron) or formaldehyde shall not be used for stripping or depigmentation.</p> <p>Assessment and verification: The applicant shall provide a declaration of non-use.</p>	<p>Alternative 1:</p> <p>Heavy metal salts (except of iron) or formaldehyde shall not be used for stripping or depigmentation.</p> <p>Assessment and verification: The applicant shall provide a declaration of non-use.</p> <p>Alternative 2:</p> <p>No criteria</p>

Discussion

The relevance of this criterion was questioned in the last revision (2009). To the knowledge of the authors no metal salt or formaldehyde is or has been used in stripping or depigmentation, at least in Europe. No justification is given in the revision in 2002.

Since with reference to the LCA findings in the preliminary report this criterion clearly does not have a significant environmental impact the criteria could be either be deleted or kept. Removing it will not lower the work for the applicant or Competent Body very much but it can help improve the readability of the document by making it simpler and shorter.

Consultation questions

1. Should this criterion be retained?
2. Are you aware of any additional evidence that would support its retention?

CURRENT CRITERION 13: WEIGHTING

Major proposed changes	No change currently proposed
Present criterion, Decision 2009/567	Suggested criterion
Compounds of cerium shall not be used in the weighting of yarn or fabrics. Assessment and verification: The applicant shall provide a declaration of non-use.	Compounds of cerium shall not be used in the weighting of yarn or fabrics. Assessment and verification: The applicant shall provide a declaration of non-use.

Discussion

The relevance of this criterion was also discussed in the last revision (2009). To the knowledge of the authors cerium is not used in weighting of yarn or fabric in Europe, but may be used in some developing countries.

It has not been possible at this stage to gain new information on this issue. It is therefore suggested to keep the criterion unchanged.

Consultation questions

1. Should this criterion be retained unchanged?
2. Are you aware of any additional evidence that would support its retention unchanged?

CURRENT CRITERION 14: ALL CHEMICALS AND CHEMICAL PREPARATIONS

<p>Major proposed changes</p>	<ul style="list-style-type: none"> Propose changing the title to ‘Detergents, fabric softeners and complexing agent restrictions’ The exclusion of NTA (nitrilotriacetic acid) is proposed. A triviality limit of 5 ppm is proposed for APEOs if testing is required.
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>Alkylphenoethoxylates (APEOs), linear alkylbenzene sulfonates (LAS), 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), and diethylene triamine penta acetate (DTPA) shall not be used and shall not be part of any preparations or formulations used.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use.</p>	<p>Alkylphenoethoxylates (APEOs), linear alkylbenzene sulfonates (LAS), 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) and nitrilotriacetic acid (NTA) shall not be used and shall not be part of any preparations or formulations used.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use. If testing is required for APEOs the triviality limit is 5 ppm</p>

Cationic detergents and surfactants

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 softeners through which they can 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. Since they might still be used in other countries their exclusion is still relevant.

Alkylphenol ethoxylates

APEOs (Alkylphenoethoxylates) have been voluntarily phased out by TEGEWA (Industrial Association for Textile and Leather Aids, Tanning Materials, and Raw Materials for Detergents) by the end of 2001. This commitment covers all European TEGEWA members but not necessary manufacturers in other parts of the world. A ban on APEO is therefore 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 substance or component in preparations to 0.1% by mass.

Öko-Tex 100 has recently (October 2011) decided also to include nonyl- and octylphenol and their ethoxylated compounds in their standard. The limiting values are:

- nonylphenol: 100 ppm
- octylphenol: 100 ppm
- total nonylphenol(1-9) ethoxylates: 1000 ppm
- total octylphenol(1-2) ethoxylates: 1000 ppm

The 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. However it might be useful to have a triviality limit if very small amounts are found in the product. The Danish Competent body has previously tested a number of eco labeled textile and did find very small amounts in 7 out of 7 tested textiles. The concentrations of APEO were between 1-4 ppm so a triviality limit of 5 ppm is proposed when testing is required.

Nitrilotriacetic acid (NTA) toxicology

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. This evidence is supported by the labelling of NTA with hazard statement H351 and risk phrases R 22, 36 and 40.

Several investigations have shown that the presence of NTA in water/sediment systems increases the concentration of heavy metals in the water phase. NTA is known to be aerobically biodegradable by acclimated microorganisms. Biodegradability tests with NTA have been

inconsistent; 90% degradation has been reported after 9 and 13 days in tests with activated sludge, while degradation attained only 20% in a CO₂ evolution test after 28 days and did not occur in shake flask and BOD tests. Following a period of acclimatisation, almost complete biodegradation has been reported for the activated sludge process when operated under optimum conditions.

The toxicity of NTA towards algae, crustaceans and fish is low with EC/LC₅₀ 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 [Madsen *et al.* 2001].

For this revision it is therefore proposed that a restriction on NTA is now introduced.

Consultation questions

1. Do you agree with a restriction on NTA?
2. Is a precautionary approach justified based on the evidence cited?
3. Do you agree with the proposed triviality limit on 5 ppm for APEOs if testing is required?
Should this or other triviality limits be established for the other substances in this criterion?

CURRENT CRITERION 15: DETERGENTS, FABRIC SOFTENERS AND COMPLEXING AGENTS

<p>Major proposed changes</p>	<ul style="list-style-type: none"> Propose changing the title to ‘Detergents, fabric softeners and complexing agent biodegradability’
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>At each wet-processing site, at least 95 % by weight of fabric softeners, complexing agents and detergents by weight shall be sufficiently degradable or eliminable in wastewater treatment plants.</p> <p>This is with the exception of surfactants in detergents and fabric softeners at each wet processing site, which shall be ultimately aerobically biodegradable.</p> <p><i>Assessment and verification:</i> ‘Sufficiently biodegradable or eliminable’ is as defined above in the criterion related to auxiliaries and finishing agents for fibres and yarns. The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all detergents, fabric softeners and complexing agents used.</p> <p>‘Ultimate aerobic biodegradation’ has to be interpreted as laid down in Annex III to Regulation (EC) No 648/2004 of the European Parliament and of the Council (1). The applicant shall provide appropriate documentation, safety data sheets, test reports</p>	<p>At each wet-processing site, at least 95 % by weight of fabric softeners, complexing agents and detergents by weight shall be sufficiently degradable or eliminable in wastewater treatment plants.</p> <p>This is with the exception of surfactants in detergents and fabric softeners at each wet processing site, which shall be ultimately aerobically biodegradable.</p> <p><i>Assessment and verification:</i> ‘Sufficiently biodegradable or eliminable’ is as defined above in the criterion related to auxiliaries and finishing agents for fibres and yarns. The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all detergents, fabric softeners and complexing agents used.</p> <p>‘Ultimate aerobic biodegradation’ has to be interpreted as laid down in Annex III to Regulation (EC) No 648/2004 of the European Parliament and of the Council (1). The applicant shall provide appropriate documentation, safety data sheets, test reports</p>

and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all surfactants in detergents and fabric softeners used.	and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all surfactants in detergents and fabric softeners used.
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Discussion

This criterion was changed during the 2009 revision. The change meant that the surfactants in detergents and fabric softeners shall be ultimately aerobically biodegradable. This criterion is harmonization with Regulation (EC) No 648/2004 and does not affect products regulated by this regulation.

For detergents and fabric softeners produced in countries outside Europe the new criterion meant that some products no longer could be used in the production of ecolabelled textiles.

The criterion is harder than the corresponding criterion from GOTS (Global organic textile standard) which only requires that the surfactants are inherently biodegradable.

Consultation questions

1. Do you agree that the criterion still is good enough and need no revision?

CURRENT CRITERION 16 BLEACHING AGENTS: CHLORINE AGENTS ARE EXCLUDED FOR BLEACHING YARNS, FABRICS AND END PRODUCTS

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • Text in the heading is now also a part of the criteria instead with the title of the criteria simply reading as ‘bleaching agents’ • Omission of the exclusion for man-made cellulose fibres
<p>Present criterion, Decision 2009</p>	<p>Suggested criterion</p>
<p>This requirement does not apply to the production of man-made cellulose fibres (see criterion 6.1)</p> <p><i>Assessment and verification</i> The applicant shall provide a declaration of non-use of chlorinated bleaching agents</p>	<p>Chlorine agents are excluded for bleaching yarns, fabrics and end products.</p> <p><i>Assessment and verification</i> The applicant shall provide a declaration of non-use of chlorinated bleaching agents</p>

Discussion

The exclusion of chlorine bleaching agents was introduced in the revision in 2009. It did not cover man-made cellulose fibres which were covered by criterion 6.1.

Since chlorine bleaching is still used the criterion is still considered to be relevant. In order to simplify the criterion it is to be discussed whether the clause excluding man-made cellulose fibres could be removed. Industry best practice suggests that man-made cellulose fibres can be bleached using alternative agents.

Consultation questions

1. Do you agree with the deletion of the man-made cellulose fibre exclusion?

CURRENT CRITERION 17, 21, 22 AND 23: DYES

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • New heading: Dyes • Criteria 17, 21, 22 and 23 grouped in one. • Potentially sensitizing dyes: Two new dyes have been listed in order to harmonise with Ökotex: C.I. Disperse Blue 1 and C.I. Disperse yellow 3 • Azo Dyes: One new aryl amine has been added to the list order to harmonize with Ökotex: 4,4'-Methylene-bis-(2-chloroaniline) (101-14-4) • Dyes classified with R50, R50/53 or R51/53 cannot be used • Two allergenic risk phrases (R52/53) are to be applied
<p>Present criterion, Decision 2009</p>	<p>Suggested criterion</p>
<p>See the full text in the criteria document criteria 17, 21, 22 and 23.</p>	<p>Dyestuffs must fulfill criterion 17.1-5</p> <p>17.1 Impurities</p> <p>The levels of ionic impurities in the dyes used shall not exceed the values given in appendix 1</p> <p>17.2 Azo dyes</p> <p>Azo dyes shall not be used that may cleave to carcinogenic arylamine compounds (MAK III, category 1 and 2).</p> <p>See appendix 1 for full list</p> <p>17.3 Potentially sensitizing dyes</p> <p>Dyes classified as allergenic may not be used.</p> <p>See appendix 1 for full list</p> <p>17.4 Dyes that are classified as carcinogenic, mutagenic or toxic to reproduction may not be used.</p> <p>See appendix 1 for full list</p>

	<p>No use is allowed of dye substances or of dye preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the risk phrases (or combinations thereof) listed in appendix 1</p> <p>17.5 Dyes that are hazardous to aquatic ecosystems</p> <p>No use is allowed of dyestuffs that are assigned or may be assigned at the time of application with any of the risk phrases listed in appendix 1</p>
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Discussion

Historically the criteria for dyes have been divided into several criteria where each one covered a specific aspect. This group of criterion have more or less remained unchanged since 2002. In this version it has been the intention to group the different criteria in one single criterion which covers all the relevant criteria.

During the last revision we discussed the possibility of excluding the use of dyes and chemicals that were classified as environmentally hazardous but it was decided not to do it at that time. According to major dye manufactures the trend is for dyes and chemicals are becoming less and less harmful so it is now proposed to exclude dyes that are classified as environmental hazardous.

The new requirements under the Ecolabel Regulation also require that hazardous substances are restricted and these restrictions will apply to the majority of the dyes addressed by the current criteria. However, industry experience suggests that the restricted dyes should still be listed for clarity as the majority of production is situated outside the EU.

The Danish Competent body has checked the classification of more than 50 dyestuffs on the market today from different suppliers and the conclusion was that the most common risk phrases are R43 (May cause sensitization by skin contact) and R52/53 (Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment). The quality of the material safety data sheets were generally good but some of the data sheets from India and China did not contain much information and the dyestuffs from these suppliers were not classified at all or did not claim to contain any classified substances according to the safety data sheets. Some of the data sheets from an Indian supplier had information that indicated that the dyestuffs should have been classified as R52/53.

Old criterion 17 Impurities in dyes:

The criterion is unchanged.

Old criterion 21 – Azo dyes

Referring to the Preliminary report most of the azo dyes are not allowed to be used in the EU because of REACH. Since the majority of production is situated outside the EU it is suggested to keep the criteria but to make it clear in the User Manual which azo dyes are covered by REACH.

The list of aryl amines have been removed to an appendix. The list contains aryl amines that have carcinogenic properties according to MAK III category 1 and 2. This is the same requirement that Öko-tex has.

Since the last revision in 2006-7 4,4'-Methylene-bis-(2-chloroaniline) have been added to MAK category 2 and has been added to the list in the appendix. GOTS have also listed aryl amines classified according to MAK III category 3. These are to be cross referenced with the Ecolabel restrictions.

Old criterion 22 - Dyes that are carcinogenic, mutagenic or toxic to reproduction

The criterion is unchanged.

Old criterion 23 - Potentially sensitizing dyes

The list of restricted dyes has been removed to an appendix. C.I. Disperse Blue 1 and C.I. Disperse yellow 3 have been added to the list in order to harmonize with Öko-tex.

MAK III category 3 dyes

GOTS have also listed aryl amines classified according to MAK III category 3. No justification for this is public available. These are not currently listed by the Oeko-tex label. It is to be discussed if

this classification should also be added to the EU Ecolabel criteria. These substances are also to be cross referenced with the Ecolabel restrictions.

Consultation questions

1. Do you agree with the changes to the structure and coverage of the criterion?
2. Is it appropriate and workable to add allergen skin contact to the Risk and Hazard phrases?
3. Should MAK III classified aryl amine dyes be restricted?

DRAFT

CURRENT CRITERION 18: IMPURITIES IN PIGMENTS: INSOLUBLE COLOUR MATTER WITHOUT FIBRE AFFINITY

Major proposed changes	No change currently proposed.	
Present criterion, Decision 2009	Suggested criterion	
<p>The levels of ionic impurities in the dyes used shall not exceed the following: Ag 100 ppm; As 50 ppm; Ba 100 ppm; Cd 20 ppm; Co 500 ppm; Cr 100 ppm; Cu 250 ppm; Fe 2 500 ppm; Hg 4 ppm; Mn 1 000 ppm; Ni 200 ppm; Pb 100 ppm; Se 20 ppm; Sb 50 ppm; Sn 250 ppm; Zn 1 500 ppm.</p> <p>Any metal that is included as an integral part of the dye molecule (e.g. metal complex dyes, certain reactive dyes, etc.) shall not be considered when assessing compliance with these values, which only relate to impurities.</p>	<p>The levels of ionic impurities in the dyes used shall not exceed the following: Ag 100 ppm; As 50 ppm; Ba 100 ppm; Cd 20 ppm; Co 500 ppm; Cr 100 ppm; Cu 250 ppm; Fe 2 500 ppm; Hg 4 ppm; Mn 1 000 ppm; Ni 200 ppm; Pb 100 ppm; Se 20 ppm; Sb 50 ppm; Sn 250 ppm; Zn 1 500 ppm.</p> <p>Any metal that is included as an integral part of the dye molecule (e.g. metal complex dyes, certain reactive dyes, etc.) shall not be considered when assessing compliance with these values, which only relate to impurities.</p>	

Discussion

No change has been suggested for this criterion. It has not been possible to find evidence that the listed impurities are not still present in pigments.

Consultation questions

1. Are these impurities still present in pigments?

3.19 CURRENT CRITERION 19: CHROME MORDANT DYING

Major proposed changes	No change currently proposed.
Present criterion, Decision 2009	Suggested criterion
Chrome mordant dying is not allowed. <i>Assessment and verification:</i> The applicant shall provide a declaration or non-use.	Chrome mordant dying is not allowed. <i>Assessment and verification:</i> The applicant shall provide a declaration or non-use.

Discussion

Chrome mordant dyes can be used with wool. It is not clear how much they are used any more so this criterion may no longer be relevant.

Consultation questions

1. Is this criterion still relevant?

CURRENT CRITERION 20: METAL COMPLEX DYES

Major proposed changes	<ul style="list-style-type: none"> • Metal complex dyes are not to be only allowed when dyeing wool, polyamide or silk.
Present criterion, Decision 2009	Suggested criterion
<p>If metal complex dyes based on copper, chromium or nickel are used:</p> <p>20.1. In case of cellulose dyeing, where metal complex dyes are part of the dye recipe, less than 20 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site).</p> <p>In case of all other dyeing processes, where metal complex dyes are part of the dye recipe, less than 7 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site).</p> <p>The applicant shall either provide a declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; EN 1233 for Cr.</p> <p>20.2. The emissions to water after treatment shall not exceed: Cu 75 mg/kg (fibre, yarn or fabric); Cr 50 mg/kg; Ni 75 mg/kg.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; EN 1233 for Cr.</p>	<p>Metal complex dyes are only allowed when dyeing wool, polyamide or silk.</p> <p>If metal complex dyes based on copper, chromium or nickel are used:</p> <p>20.1. In case of cellulose dyeing, where metal complex dyes are part of the dye recipe, less than 20 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site).</p> <p>In case of all other dyeing processes, where metal complex dyes are part of the dye recipe, less than 7 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site).</p> <p>The applicant shall either provide a declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; EN 1233 for Cr.</p> <p>20.2. The emissions to water after treatment shall not exceed: Cu 75 mg/kg (fibre, yarn or fabric); Cr 50 mg/kg; Ni 75 mg/kg.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; EN 1233 for Cr..</p>

Discussion

Metal complex dyes are proposed only to be allowed when dyeing wool, silk or polyamide. During the last revision metal complex dyes were debated since they contain heavy metal complexes that often are more toxic for the aquatic environment compared to other dyes.

It has been argued that for fibers like wool, silk and polyamide it is difficult to obtain a good colour fastness if metal complex dyes are not permitted.

By contrast, when dyeing cotton it can be difficult to obtain a high colour fastness when dyeing light colours and so only some colours can be difficult to obtain without metal complex dyes (e.g. turquoise).

A restriction on metal complex dyes would make it difficult to dye wool, silk or polyamide but will only have minor influence when dyeing cotton. It is therefore proposed only to permit metal complex dyes when dyeing wool, silk or polyamide.

Consultation questions

1. Do you agree with the proposal to restrict metal complex dyes for the three proposed fibers?

CURRENT CRITERION 21: AZO DYES

The criterion is proposed to move to the new criterion 17 - Dyes

CURRENT CRITERION 22: DYES THAT ARE CARCINOGENIC, MUTAGENIC OR TOXIC TO REPRODUCTION

The criterion is proposed to move to the new criterion 17 - Dyes

CURRENT CRITERION 23: POTENTIALLY SENSITISING DYES

The criterion is proposed to move to the new criterion 17 - Dyes

CURRENT CRITERION 24: HALOGENATED CARRIERS FOR POLYESTER

Major proposed changes	No change currently proposed.	
Present criterion, Decision 2009	Suggested criterion	
Halogenated carriers shall not be used. <i>Assessment and verification:</i> The applicant shall provide a declaration of non-use.	Halogenated carriers shall not be used. <i>Assessment and verification:</i> The applicant shall provide a declaration of non-use.	Halogenated carriers shall not be used. <i>Assessment and verification:</i> The applicant shall provide a declaration of non-use.

Discussion

At this stage it has not been possible to gain evidence as to whether halogenated carriers for polyester are still being used and if they will be restricted by the new criterion on hazardous substances.

Consultation questions:

1. Are halogenated carriers still used and hence is this criterion still needed?

CURRENT CRITERION 25: PRINTING

Major proposed changes	No change currently proposed.	
Present criterion, Decision 2009	Suggested criterion	
<p>25.1. Printing pastes used shall not contain more than 5 % volatile organic compounds such as white spirit (VOCs: 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).</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration that no printing has been made or provide appropriate documentation showing compliance together with a declaration of compliance.</p> <p>25.2. Plastisol-based printing is not allowed.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration that no printing has been made or provide appropriate documentation showing compliance together with a declaration of compliance.</p>	<p>25.1. Printing pastes used shall not contain more than 5 % volatile organic compounds such as white spirit (VOCs: 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).</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration that no printing has been made or provide appropriate documentation showing compliance together with a declaration of compliance.</p> <p>25.2. Plastisol-based printing is not allowed.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration that no printing has been made or provide appropriate documentation showing compliance together with a declaration of compliance.</p>	

Discussion

This criteria was only identified in the preliminary report as an area of significant in relation to process energy use. Information on the content of VOC in the printing past is to be investigated further.

The energy use associated with printing processes was highlighted as a potential area of improvement in the preliminary report – although more data is required to substantiate its significance.

Consultation questions

1. Should this criteria be retained?
2. Is it possible to lower the limit for VOC or completely forbid VOC in printing paste?
3. Is data available for process energy use associated with printing processes?

DRAFT

CURRENT CRITERION 26: FORMALDEHYDE

Major proposed changes	<ul style="list-style-type: none"> No release of formaldehyde is permitted for all products – with a detection limit proposed as 16 ppm
Present criterion, Decision 2009	Suggested criterion

The amount of free and partly hydrolysable formaldehyde in the final fabric shall not exceed 20 ppm for babies and young children under 3 years old, 30 ppm for products that come into direct contact with the skin, and 75 ppm for all other products.

Assessment and verification: The applicant shall either provide a declaration that formaldehyde containing products have not been applied or provide a test report using the following test method: EN ISO 14184-1.

The amount of free and partly hydrolysable formaldehyde in the final fabric shall not exceed 16 ppm for all other products.

Assessment and verification: The applicant shall either provide a declaration that formaldehyde containing products have not been applied or provide a test report using the following test method: EN ISO 14184-1.

Discussion

Formaldehyde is released by some textiles finishes, such as those conferring crease resistance, while the garment is new. These finishes are most likely to be used on fabrics that otherwise crease easily, such as cotton or wool.

Skin contact with formaldehyde can cause skin rashes and allergic skin reactions. The levels of exposure which may cause these allergic reactions will vary between individuals, and will depend in part on the individuals previous allergy history. Instances of dermatitis arising from wearing clothing containing high levels of formaldehyde have been documented. [NICNAS, 2007].

Formaldehyde is also a potential problem for the indoor climate, where the sources are mainly understood to be fibre boards used in furniture but also emissions from textiles on furniture or decorations can also contribute.

According to BREF (2003) the best available technology is to use formaldehyde-free or formaldehyde-poor cross-linking agent (<0,1 % formaldehyde content in the formulation). Substitute products such as glyoxals can be used [EU Ecolabel, 2007].

In the label Ökotex there are 4 classes of limit values on formaldehyde depending on the degree of skin exposure and sensitivity [Okotex 100, version 1 2011]:

- Class 1 (baby): 16 ppm (i.e. no formaldehyde)
- Class 2 (contact with skin): 75 ppm
- Class 3 (without contact with skin): 300 ppm
- Class 4 (decoration material): 300 ppm

Two standard methods are available for measuring the release of formaldehyde from textiles: the water extraction method (EN ISO 14184-1) and the vapor absorption method (EN ISO 14184-2) for testing air emissions of formaldehyde. The detection limit for both methods is 20 mg/kg.

Oeko-tex certification (baby-level) requires that formaldehyde cannot be detected in final products. Not detected is assumed to correspond to a level of < 16 ppm. The Eco-label requires that the concentration of formaldehyde must not exceed 20 ppm in products for babies and young children under 3 years old, 30 ppm for products in direct contact with the skin and 75 ppm for all other products.

A European survey on the release of formaldehyde showed that 11% of the samples intended to be in direct contact with the skin exceeded 30 mg/kg. For textiles for babies under the age of two 11% of the garments released more than 20 mg/kg [EU Ecolabel, 2007].

There are two possible ways for setting the new criteria:

- The first is a harmonisation with Ökotex 100. This means no strengthening of the criteria and referring to the survey the majority of the products on the market should fulfil these criteria.
- The second is to harmonise with GOTS and to not accept any release of formaldehyde – with a detection limit is 16 mg/kg. This would be a clear strengthening of the criteria and yet it would still be possible for the producers to achieve. From a communication or sales point of view “zero formaldehyde” is a clear improvement compared to the present criteria.

Consultation questions:

1. Should we 1) harmonise the criteria with Öeko-tex or 2) should we have a limit for all kind of textiles of < 16 mg/kg which is in harmony with GOTS?

CURRENT CRITERION 27: WASTE WATER FROM DISCHARGES FROM WET-PROCESSING

<p>Major proposed changes</p>	<ul style="list-style-type: none"> • Greasy wool scouring treatment are to be included. • Emission limits for all fibre types are harmonised at 20 g/kg • Fulfilment of national legislation for all parts of the product chain – see criteria for CSR.
<p>Present criterion, Decision 2009/567</p>	<p>Suggested criterion</p>
<p>(a) Waste water from wet-processing sites (except greasy wool scouring sites and flax retting sites) shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than 20 g/kg, expressed as an annual average.</p> <p>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.</p> <p>(b) If the effluent is treated on site and discharged directly to surface waters, it shall also have a pH between 6 and 9 (unless the pH of the receiving water is outside this range) and a temperature of less than 40°C (unless the temperature of the receiving water is above this value).</p> <p>Assessment and verification: The applicant shall provide documentation and test reports showing compliance with this criterion, together with a declaration of compliance.</p>	<p>(a) Waste water from wet-processing sites shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than 20 g/kg, expressed as an annual average.</p> <p>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.</p> <p>(b) If the effluent is treated on site and discharged directly to surface waters, it shall also have a pH between 6 and 9 (unless the pH of the receiving water is outside this range) and a temperature of less than 40°C (unless the temperature of the receiving water is above this value).</p> <p>Assessment and verification: The applicant shall provide documentation and test reports showing compliance with this criterion, together with a declaration of compliance.</p>

Discussion

In the present criteria the COD of discharges from the scouring of greasy wool is exempted from this criteria. Proposals for these discharges to be addressed by this criterion were discussed under criterion 5.5.

Comments from stakeholders, (see Preliminary report) suggest that the two options listed in criteria 5.5 are inconsistent. It was suggested by stakeholders to delete the criteria 5.5 and include it in this criterion and only to have a limit for the emission after final treatment, whether this is on site, off site or a combination. also It was also suggested to harmonise the emissions limit to 20 g COD/kg. Based on initial stakeholder feedback this level is achievable.

For wool the limit on 20 g COD/kg should be compared to criterion 5.5's conditions for outlets to a sewer: 60 g COD/kg to sewer followed by a 75 % reduction from off side treatment, equalling a limit of 15 g COD/kg. And for on-site treatment and discharge to surface water: 45 g COD/kg. So a new limit on 20 g COD/kg would represent a significant strengthening of the criteria if the treatment takes place on site and a weakening if the treatment is taken off site.

The limit for other productions was suggested to be 20 g COD /kg in the last revision (2009) – based on input from 19 Danish license holders (just under a quarter of the current textile product Ecolabel licenses). It is therefore suggested to harmonise the emissions requirement for the different processes at 20 mg COD/m³.

Consultation questions:

1. Do you agree with harmonisation of the criterion so that it applies to wool?

CURRENT CRITERION 28: FLAME RETARDANTS

Major proposed changes	<ul style="list-style-type: none"> • Restriction of substances with flame retardant properties that meet the criteria described in Articles 6(6) and 6(7) of the Ecolabel Regulation • Consideration of derogations based on specific textile products which require flame retardancy
Present criterion, Decision 2009	Suggested criterion
<p>No use is allowed of flame retardant substances or of flame retardant preparations containing more than 0.1% by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combination of thereof):</p> <p>R40 (limited evidence of a carcinogenic effect), R45 (may cause cancer), R46 (may cause heritable genetic damage), R49 (may cause cancer by inhalation), R50 (very toxic to aquatic organisms), R51 (toxic to aquatic organisms), R52 (harmful to aquatic organisms), R53 (may cause long-term adverse effects in the aquatic environment), R60 (may impair fertility), R61 (may cause harm to the unborn child), R62 (possible risk of impaired fertility), R63 (possible risk of harm to the unborn child), R68 (possible risk of irreversible effects),</p>	<p>Open for discussion with reference to the discussion in the preliminary and technical reports.</p>

<p>as laid down in Directive 67/548/EEC and its subsequent amendments.</p> <p>Flame retardants which are only physically mixed into the polymer fibre or into a textile coating are excluded (additive flame retardants).</p> <p>Assessment and verification: The applicant shall either provide a declaration that additive flame retardants have not been used and indicate which reactive flame retardants, if any have been used and provide documentation (such as safety data sheets) and/or declarations indicating that those flame retardants comply with this criterion.</p>	
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Discussion

Feedback from the stakeholder questionnaire argued that flame retardants are necessary in some textile applications and should be regulated like other chemicals because there is no clear definition of a “flame retardant”. Flame retardants have been discussed extensively in other product groups and no solution satisfying all stakeholders has been found yet.

The current criteria have been criticised by producers stating that it is too arbitrary in how it deals with flame retardants in textiles. For example, an additive flame retardant with no risk phrases would not currently fulfil the criteria. On the other hand, it is also the case that some products that currently qualify for Ökotex, which excludes a wider range of flame retardants than currently feature in the ECHA candidate list, may also not qualify because their precursors are covered by excluded risk phrases. Very few flame retardants exist that are fully reactive, as the industry interprets the current criteria.

Furthermore, a significant number of flame retardants currently used are understood to be incorporated in an additive form and therefore excluded by the Ecolabel unless the alternative clause in the current Regulation is used which is with reference to Regulation (EC) No 1272/2008. It is understood that without clarification this effectively excludes certain product ranges which require specific flame retardants in order to meet Member State fire regulations.

Fire retardants currently restricted by REACH and forming part of the SVHC Candidate List are as follows:

REACH Annex XVII

- PeBDE – Pentabromodiphenyl oxide (0,1% wt)
- OcBDE – Octabromodiphenyl oxide (0,1% wt)
- TEPA – Tris(aziridinyl)phosphin oxide (skin contact)
- TRIS – Tris (2,3 dibromopropyl) phosphate (skin contact)
- PBBs – Polybrominated biphenyls (0,1% wt)

REACH SVHC Candidate List

- HBCD – Hexabromocyclododecane
- TCEP – Tris (2, chloroethyl)phosphate

With the exception of decBDE this combined list is reflected by the flame retardants currently restricted by the Ökotex 100 label as of January 2011.

Brominated flame retardants were highlighted as an area of focus by the Commission Statements and stakeholder feedback. As we have highlighted a range of brominated retardants are now either restricted by REACH or appear on the SVHC Candidate List. The European Flame Retardants Association (EFRA) has highlighted the continued need for the use of the brominated flame retardants Decabromodiphenyl ether (Deca-BDE) and Hexabromocyclododecane (HBCD) in furniture and upholstery in order to meet EU Member State fire safety regulations.

Cross checking the Risk Phrases for these flame retardants shows that Deca-BDE does not currently carry any Risk Phrases whilst HBCD appears on the Candidate List and carries R63 and R64. Deca-BDE is the subject of ongoing monitoring at an EU and International level with regard to its classification under REACH. It is also understood that Deca-BDE may be of limited application in relation to the Ecolabel but further investigation is required in order to confirm this.

It is to be discussed during the revision process whether derogations of other specific flame retardants which may be classified as hazardous substances should be made from the new criteria – particularly for the following specific applications:

- Furnishings and drapery that fulfil the textile product definition,
- Nightwear (poly-cotton blends and health service and care facility nightwear),
- Bed linen (particularly for health services and care facilities)
- Personal Protective Equipment (PPE).

It is understood that DecaBDE may be used in PPE applications alongside other alternatives, including inherently flame retardant materials. For the other listed applications organophosphorous and inorganic retardants would tend to be used, a number of which are already restricted and appear on the SVHC Candidate List. It is also understood that the suitability of specific retardants will depend on whether the fibre is natural or synthetic, and that this in turn will also influence the potential for residues to come into contact with skin.

Derogations can only be made if no technically or economically feasible alternatives can be identified. It is proposed that, in addition to input from stakeholders, fabrics and materials registered with Oeko-tex, research by SWEREA (Swedish Research) and a 2010 technical study of substitute technologies commissioned by the UK Government's Department for the Environment, Food and Rural Affairs (DEFRA), are used as a reference point in order to further evaluate current industry best practice.

How Oeko-tex distinguishes between flame retardants

Öko-tex distinguishes between fibre materials which receive the flame retardant properties into the spinning mass already (copolymer, additives) and a finish with flame retardant products in a later processing step. For both forms of application flame retardants are only allowed for classes 1 and 2 (as discussed under criterion 26) if it has been assessed by Öko-tex and concluded that the substances can be used without any restrictions [Ökotex 100, point 4.3.]

GOTS

GOTS have no specific requirements for flame retardants which mean that only their normal chemical requirements are relevant for flame retardants.

This means e.g. that flame retardants with halogens are allowed as long as they do not contribute with more than 1% AOC (Assimilable Organic Carbon) to the primary effluent. This is a requirement that is difficult to evaluate so it is a requirement where harmonisation is not advisable.

Consultation questions

1. How could a criterion for flame retardants be worded? Allowing only the “best” substances and still giving producers a choice to choose the ones that makes the product fulfill standards for fire safety?
2. How could the definition of reactive and additive flame retardants be improved to better reflect product chemistry?
3. Do additive or partially reactive flame retardants exist which would provide adequate fire safety for the specific applications whilst not carrying Risk Phrases?
4. Are there inherently flame retardant materials in the market which would enable PPE to meet the Ecolabel requirements?

DRAFT

CURRENT CRITERION 29: ANTI FELTING FINISHES

Major proposed changes	No changes currently proposed
Present criterion, Decision 2009	Suggested criterion
<p>Halogenated substances or preparations shall only be applied to wool slivers and loose scoured wool.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use (unless used for wool slivers and loose scoured wool).</p>	<p>Halogenated substances or preparations shall only be applied to wool slivers and loose scoured wool.</p> <p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use (unless used for wool slivers and loose scoured wool)</p>

Discussion

Shrink resistant finishes or anti-felt finishing are applied with the purpose of conferring anti-felt characteristics to the wool goods. This is required when the material needs to be repetitively washed in a laundry machine without shrinking.

According to the draft IPPC reference [BREF Textiles] two treatments, which are also complementary, are applied:

- oxidising treatment (subtractive treatment)
- treatment with resins (additive treatment).

These treatments can be applied at any stage of the process and on all different make-ups. They are most commonly applied to combed tops for specific end products (e.g. underwear).

The issues to be addressed by the criteria are two-fold – 1) the COD and AOX of wastewater effluent and 2) the restriction of substances under Articles 6(6) and 6(7) of the Ecolabel Regulation. Ecotoxicity from wastewater effluent was not highlighted as a specific area for improvement in the preliminary report.

Oxidising treatments

This treatment has traditionally been carried out using one of the following chlorine-releasing agents:

- sodium hypochlorite
- sodium salt dichloroisocyanurate

- active chlorine (no longer used).

The oldest process is the one using sodium hypochlorite. However, since the development of active chlorine is difficult to control, wool fibre characteristics can be deeply changed, also giving irregular results. Dichloroisocyanurate is more advantageous here, because it has the ability to release chlorine gradually, thereby reducing the risk of fibre damage.

The chlorine-based agents have recently encountered restrictions because they react with components and impurities (soluble or converted into soluble substances) in the wool, to form adsorbable organic chlorine compounds (AOX).

Alternative oxidising treatments have therefore been developed. In particular, peroxydisulphate, permanganate, enzymes and corona discharge come into consideration here. However, the only alternative to chlorine-based agents readily available today is peroxydisulphate. The process with peroxydisulphate compounds is quite similar to the chlorine treatment. If necessary, the material is treated with a polymer (see treatments with resins below).

Treatments with resins (additive processes)

In additive processes polymers are applied to the surface of the fibre with the aim of covering the scales with a coating. The polymer may be, in some case, sufficiently effective on its own to make pre-treatment unnecessary. Otherwise an oxidative and reductive pre-treatment is necessary.

Combined treatments

However, the combination of subtractive and additive processes has the largest technical effect.

A combined treatment has been widely used for years as anti-felt finishing of wool in different states (loose fibre, combed top, yarn, knitted and woven fabric) due to its low cost and high quality effects. However, the effluent shows high concentrations of COD and AOX. The formation of AOX is attributable not only to the oxidant, but also to the resin, which is based on a cationic polyamide and involves the use of epichlorohydrine.

Alternative resins have been developed, based on polyethers, cationic aminopolysiloxanes, synergic mixtures of polyurethanes and polydimethylsiloxanes, but they all have some limitations concerning their applicability.

New processes have also been developed, but so far the results achieved with the combined treatment process cannot be fully matched by any alternative, which is why it is still the preferred process particularly for treatments such as the anti-felt finishing of combed tops.

According to the PARCOM recommendations from 1992 chlorinated shrink resistant finishes were still accepted for wool sliver, knitted wool garments and socks before piece dyeing. These

recommendations were revised in December 1999 after which chlorinated shrink resistant finishes were only recommended for wool tops.

Consultation questions

1. Is this criteria still necessary?
2. Do you agree that the criterion is still good enough and therefore requires no revision?
3. Do any of the commonly used oxidising treatments or resins carry risk or hazard phrases?

DRAFT

CURRENT CRITERION 30: FABRIC FINISHES

Major proposed changes	<ul style="list-style-type: none"> Alignment is required with the proposed new Criteria 10
Present criterion, Decision 2009	Suggested criterion
<p>The word 'finishes' covers all physical or chemical treatments giving to the textile fabrics specific properties such as softness, waterproof, easy care.</p> <p>No use is allowed of finishing substances or of finishing preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):</p> <ul style="list-style-type: none"> — R40 (limited evidence of a carcinogenic effect), — R45 (may cause cancer), — R46 (may cause heritable genetic damage), — R49 (may cause cancer by inhalation), — R50 (very toxic to aquatic organisms), — R51 (toxic to aquatic organisms), — R52 (harmful to aquatic organisms), — R53 (may cause long-term adverse effects in the aquatic environment), — R60 (may impair fertility), — R61 (may cause harm to the unborn child), — R62 (possible risk of impaired fertility), — R63 (possible risk of harm to the unborn child), 	<p>The word 'finishes' covers all physical or chemical treatments giving to the textile fabrics specific properties such as softness, waterproof, easy care.</p> <p>No use is allowed of finishing substances or of finishing preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):</p> <ul style="list-style-type: none"> — R40 (limited evidence of a carcinogenic effect), — R45 (may cause cancer), — R46 (may cause heritable genetic damage), — R49 (may cause cancer by inhalation), — R50 (very toxic to aquatic organisms), — R51 (toxic to aquatic organisms), — R52 (harmful to aquatic organisms), — R53 (may cause long-term adverse effects in the aquatic environment), — R60 (may impair fertility), — R61 (may cause harm to the unborn child), — R62 (possible risk of impaired fertility), — R63 (possible risk of harm to the unborn child),

<p>— R68 (possible risk of irreversible effects), as laid down in Directive 67/548/EEC.</p> <p>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 and of the following hazard statements (or combinations thereof): H351, H350, H340, H350i, H400, H410, H411, H412, H413, H360F, H360D, H361f, H361d H360FD, H361fd, H360Fd, H360Df, H341.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration that finishes have not been used, or indicate which finishes have been used and provide documentation (such as safety data sheets) and/or declarations indicating that those finishes comply with this criterion.</p>	<p>— R68 (possible risk of irreversible effects), as laid down in Directive 67/548/EEC.</p> <p>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 and of the following hazard statements (or combinations thereof): H351, H350, H340, H350i, H400, H410, H411, H412, H413, H360F, H360D, H361f, H361d H360FD, H361fd, H360Fd, H360Df, H341.</p> <p><i>Assessment and verification:</i> The applicant shall either provide a declaration that finishes have not been used, or indicate which finishes have been used and provide documentation (such as safety data sheets) and/or declarations indicating that those finishes comply with this criterion.</p>
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Discussion

No change is proposed for this criterion. The technical criteria are superceded by the Article (6) and (7) requirements of the Ecolabel Regulation. The wording is to be coordinated with the new proposed criterion 10 on hazardous substances.

Consultation questions

1. Given the proposed new criteria 10 is this criteria still necessary?
2. Do you agree that no changes should be made to the criterion or is a revision needed ?

CURRENT CRITERION 31: FILLINGS

Major proposed changes	No change currently proposed	
Present criterion, Decision 2009	Suggested criterion	
<p>31.1. Filling materials consisting of textile fibres shall comply with the textile fibre criteria (1–9) where appropriate.</p> <p>31.2. Filling materials shall comply with criterion 11 on ‘Biocidal or biostatic products’ and the criterion 26 on ‘Formaldehyde’.</p> <p>31.3. Detergents and other chemicals used for the washing of fillings (down, feathers, natural or synthetic fibres) shall comply with criterion 14 on ‘Auxiliary chemicals’ and criterion 15 on ‘Detergents, fabric softeners and complexing agents’.</p> <p><i>Assessment and verification:</i> As indicated in the corresponding criteria.</p>	<p>31.1. Filling materials consisting of textile fibres shall comply with the textile fibre criteria (1–9) where appropriate.</p> <p>31.2. Filling materials shall comply with criterion 11 on ‘Biocidal or biostatic products’ and the criterion 26 on ‘Formaldehyde’.</p> <p>31.3. Detergents and other chemicals used for the washing of fillings (down, feathers, natural or synthetic fibres) shall comply with criterion 14 on ‘Auxiliary chemicals’ and criterion 15 on ‘Detergents, fabric softeners and complexing agents’.</p> <p><i>Assessment and verification:</i> As indicated in the corresponding criteria</p>	

Discussion

No change is currently proposed for this criterion. The wording is to be coordinated with the new proposed criterion 10 on hazardous substances.

Consultation questions

- Do you agree that no changes should be made to the criterion or is a revision needed?

CURRENT CRITERION 32: COATINGS, LAMINATES AND MEMBRANES

Major proposed changes	No change in the substance is currently proposed. Wording has to be coordinated with the new proposed criterion on hazardous substances (Criterion 10)	
Present criterion, Decision 2009	Suggested criterion	
<p>32. Coatings, laminates and membranes</p> <p>32.1. Products made of polyurethane shall comply with the criterion set out in point 3.1 regarding organic tin and the criterion set out in point 3.2 regarding the emission to air of aromatic diisocyanates.</p> <p><i>Assessment and verification:</i> As indicated in the corresponding criteria.</p> <p>32.2. Products made of polyester shall comply with the criterion set out in point 8.1 regarding the amount of antimony and the criterion set out in point 8.2 regarding the emission of VOCs during polymerisation.</p> <p><i>Assessment and verification:</i> As indicated in the corresponding criteria.</p> <p>32.3. Coatings, laminates and membranes shall not be produced using plasticisers or solvents, which are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):</p> <ul style="list-style-type: none"> — R40 (limited evidence of a carcinogenic effect), — R45 (may cause cancer), 	<p>32. Coatings, laminates and membranes</p> <p>32.1. Products made of polyurethane shall comply with the criterion set out in point 3.1 regarding organic tin and the criterion set out in point 3.2 regarding the emission to air of aromatic diisocyanates.</p> <p><i>Assessment and verification:</i> As indicated in the corresponding criteria.</p> <p>32.2. Products made of polyester shall comply with the criterion set out in point 8.1 regarding the amount of antimony and the criterion set out in point 8.2 regarding the emission of VOCs during polymerisation.</p> <p><i>Assessment and verification:</i> As indicated in the corresponding criteria.</p> <p>32.3. Coatings, laminates and membranes shall not be produced using plasticisers or solvents, which are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):</p> <ul style="list-style-type: none"> — R40 (limited evidence of a carcinogenic effect), — R45 (may cause cancer), 	

<ul style="list-style-type: none"> — R46 (may cause heritable genetic damage), — R49 (may cause cancer by inhalation), — R50 (very toxic to aquatic organisms), — R51 (toxic to aquatic organisms), — R52 (harmful to aquatic organisms), — R53 (may cause long-term adverse effects in the aquatic environment), — R60 (may impair fertility), — R61 (may cause harm to the unborn child), — R62 (possible risk of impaired fertility), — R63 (possible risk of harm to the unborn child), — R68 (possible risk of irreversible effects), <p>as laid down in Directive 67/548/EEC.</p> <p>Alternatively, classification may be considered according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (1). 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 and of the following hazard statements (or combinations thereof): H351, H350, H340, H350i, H400, H410, H411, H412, H413, H360F, H360D, H361f, H361d H360FD, H361fd, H360Fd, H360Df, H341.</p>	<ul style="list-style-type: none"> — R46 (may cause heritable genetic damage), — R49 (may cause cancer by inhalation), — R50 (very toxic to aquatic organisms), — R51 (toxic to aquatic organisms), — R52 (harmful to aquatic organisms), — R53 (may cause long-term adverse effects in the aquatic environment), — R60 (may impair fertility), — R61 (may cause harm to the unborn child), — R62 (possible risk of impaired fertility), — R63 (possible risk of harm to the unborn child), — R68 (possible risk of irreversible effects), <p>as laid down in Directive 67/548/EEC.</p> <p>Alternatively, classification may be considered according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (1). 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 and of the following hazard statements (or combinations thereof): H351, H350, H340, H350i, H400, H410, H411, H412, H413, H360F, H360D, H361f, H361d H360FD, H361fd, H360Fd, H360Df, H341.</p>
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<p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use of such plasticizers or solvents.</p>	<p><i>Assessment and verification:</i> The applicant shall provide a declaration of non-use of such plasticizers or solvents.</p>
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Discussion

No change is currently proposed for this criterion. The wording has to be coordinated with the new proposed criterion on hazardous substances (Criterion 10).

Consultation questions

1. Do you agree that no changes should be made to the criterion or some form revision needed?

CURRENT CRITERION 33: ENERGY AND WATER USE

Major proposed changes	<ul style="list-style-type: none"> Update or replace the criteria in-line with the proposed new CSR criterion
Present criterion, Decision 2009	Suggested criterion
<p>The applicant shall provide data on water and energy use for the manufacturing sites involved in wet processing.</p> <p><i>Assessment and verification:</i> The applicant is requested to provide the abovementioned information.</p>	<p>The applicant shall provide data on water and energy use for the manufacturing sites involved in wet processing.</p> <p><i>Assessment and verification:</i> The applicant is requested to provide the abovementioned information.</p>

Discussion

The wording of the criterion makes it impossible to benchmark the data from different productions sites. A number of key environmental impacts relating to energy and water consumption arising from production were highlighted in the Preliminary report. By collecting and reporting the data it gives the producer a very useful tool to manage their the energy and water consumption and to then used this data to implement improvements.

It is suggested to either update or replace this criterion in-line with proposals to introduce new criterion addressing CSR (Corporate Social Responsibility). This may include harmonisation with existing CSR verification routes.

Consultation questions

1. Could this criterion be addressed as part of the CSR criterion?
2. Should a fixed reporting format be introduced or should the criterion defer to the requirements of existing CSR reporting standards/codes?

3.3 Fitness for use criteria

The following criteria apply either to the dyed yarn, the final fabric(s), or the final product, with tests carried out as appropriate. “Appropriate” in this case means that all products shall be tested according to the criteria 34 – 39 unless the product type is explicit excluded. If a product does not fit the fitness for use criteria or the test methods are not suited for the products the product is not eligible for the EU Ecolabel.

CURRENT CRITERION 34: DIMENSIONAL CHANGES DURING WASHING AND DRYING

Major proposed changes	<ul style="list-style-type: none"> The limits for dimensional changes are lowered 															
Present criterion, Decision 2009	Suggested criterion															
<p>Information on dimensional changes (%) shall be stated both on the care label and on the packaging and/or other product information if the dimensional changes exceed:</p> <ul style="list-style-type: none"> – 2% (warp and weft) for curtains and for furniture fabric that is washable and removable, – 6% (warp and weft) for other woven products, – 8% (length and width) for other knitted products, – 8% (length and width) for terry towelling. <p>This criterion does not apply to:</p> <ul style="list-style-type: none"> – fibres or yarn, – products clearly labelled “dry clean only” or equivalent (insofar as it is normal practice for such products to be so labelled), – furniture fabrics that are not removable and washable. 	<p>Information on dimensional changes (%) shall be stated both on the care label and on the packaging and/or other product information if the dimensional changes exceed:</p> <table border="1" data-bbox="807 1032 1430 2007"> <thead> <tr> <th data-bbox="807 1032 1134 1200">Textile products or type of material</th> <th data-bbox="1134 1032 1430 1200">Dimensional changes during washing and drying</th> </tr> </thead> <tbody> <tr> <td data-bbox="807 1200 1134 1420">for curtains and for furniture fabric that is washable and removable</td> <td data-bbox="1134 1200 1430 1420">+/- 2 %</td> </tr> <tr> <td data-bbox="807 1420 1134 1487">knitted fabrics</td> <td data-bbox="1134 1420 1430 1487">+/- 4 %</td> </tr> <tr> <td data-bbox="807 1487 1134 1554">Chunky knit</td> <td data-bbox="1134 1487 1430 1554">+/- 6 %</td> </tr> <tr> <td data-bbox="807 1554 1134 1677">Towels and fine rib fabrics</td> <td data-bbox="1134 1554 1430 1677">+/- 7 %</td> </tr> <tr> <td data-bbox="807 1677 1134 1744">Interlock</td> <td data-bbox="1134 1677 1430 1744">+/- 5 %</td> </tr> <tr> <td data-bbox="807 1744 1134 2007">Woven fabrics: Cotton and cotton mix wool mix synthetic fibres</td> <td data-bbox="1134 1744 1430 2007">+/- 3 % +/- 2 %</td> </tr> </tbody> </table>		Textile products or type of material	Dimensional changes during washing and drying	for curtains and for furniture fabric that is washable and removable	+/- 2 %	knitted fabrics	+/- 4 %	Chunky knit	+/- 6 %	Towels and fine rib fabrics	+/- 7 %	Interlock	+/- 5 %	Woven fabrics: Cotton and cotton mix wool mix synthetic fibres	+/- 3 % +/- 2 %
Textile products or type of material	Dimensional changes during washing and drying															
for curtains and for furniture fabric that is washable and removable	+/- 2 %															
knitted fabrics	+/- 4 %															
Chunky knit	+/- 6 %															
Towels and fine rib fabrics	+/- 7 %															
Interlock	+/- 5 %															
Woven fabrics: Cotton and cotton mix wool mix synthetic fibres	+/- 3 % +/- 2 %															

<p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 5077 modified as follows: 3 washes at temperatures as indicated on the product, with tumble drying after each washing cycle unless other drying procedures are indicated on the product, at temperatures as marked on the product, wash load (2 or 4 kg) depending on the wash symbol. Should any of the above-mentioned limits be exceeded, a copy of the care-label and of the packaging and/or other product information shall be provided</p>	<table border="1" data-bbox="807 230 1434 309"> <tr> <td data-bbox="807 230 1134 309"></td> <td data-bbox="1134 230 1434 309">+/- 2 %</td> </tr> </table> <p>This criterion does not apply to:</p> <ul style="list-style-type: none"> – fibres or yarn, – products clearly labelled “dry clean only” or equivalent (insofar as it is normal practice for such products to be so labelled), – furniture fabrics that are not removable and washable. <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 5077 modified as follows: 3 washes at temperatures as indicated on the product, with tumble drying after each washing cycle unless other drying procedures are indicated on the product, at temperatures as marked on the product, wash load (2 or 4 kg) depending on the wash symbol. Should any of the above-mentioned limits be exceeded, a copy of the care-label and of the packaging and/or other product information shall be provided</p>		+/- 2 %
	+/- 2 %		

Discussion

This criteria was not altered in the last revision. It was suggested to lower the tolerance and to remove the possibility to exceed the tolerance if the dimension change was clearly listed on the product label. None of these suggestions were implemented in the final document.

Feedback from the first questionnaire from the German Competent Body suggested a change to the limits based on discussion with producers regarding the limits in the Blaue Engel to the following (which is the same as the criteria in the Blaue Engel (RAL-UZ 154):

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Table 3.6 Blaue Engel tolerances for dimensional change

Textile products or type of material	Dimensional changes during washing and drying
for curtains and for furniture fabric that is washable and removable	+/- 2 %
knitted fabrics	+/- 4 %
Chunky knit	+/- 6 %
Towels and fine rib fabrics	+/- 7 %
Interlock	+/- 5 %
Woven fabrics:	
Cotton and cotton mix	+/- 3 %
wool mix	+/- 2 %
synthetic fibres	+/- 2 %

Consultation questions

1. Do you agree on the proposed changes to the tolerances?
2. Should other tests be introduced for special textiles?

CURRENT CRITERION 35: COLOUR FASTNESS TO WASHING

Major proposed changes	No change currently proposed	
Present criterion, Decision 2009	Suggested criterion	
<p>The colour fastness to washing shall be at least level 3-4 for colour change and at least level 3-4 for staining.</p> <p>This criterion does not apply to products clearly labelled “dry clean only” or equivalent (insofar as it is normal practice for such products to be so labelled), to white products or products that are neither dyed nor printed, or to non-washable furniture fabrics.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 C06 (single wash, at temperature as marked on the product, with perborate powder).</p>	<p>The colour fastness to washing shall be at least level 3-4 for colour change and at least level 3-4 for staining.</p> <p>This criterion does not apply to products clearly labelled “dry clean only” or equivalent (insofar as it is normal practice for such products to be so labelled), to white products or products that are neither dyed nor printed, or to non-washable furniture fabrics.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 C06 (single wash, at temperature as marked on the product, with perborate powder).</p>	

Discussion

This criterion was not changed in the last revision. Only the wording of the text was made more clear and in line with the text in the standard ISO-105-C06. Comments from the initial stakeholder questionnaire indicated that the present level is appropriate. The criterion is almost similar to the criterion in the Blaue Engel. The only difference is more exacting requirements for indigo dyed denim (point 3.4.2).

Consultation questions

1. Do you agree that no changes should be made to the criterion or some form revision needed?
2. Should other tests be introduced for special textiles, eg. Color fastness for color, Color fastness to dry cleaning or Color fastness for sweat and saliva (for children <3 years)?

CURRENT CRITERION 36: COLOUR FASTNESS TO PERSPIRATION (ACID, ALKALINE)

Major proposed changes	No change currently proposed	
Present criterion, Decision 2009	Suggested criterion	
<p>The colour fastness to perspiration (acid and alkaline) shall be at least level 3-4 (colour change and staining).</p> <p>A level of 3 is nevertheless allowed when fabrics are both dark colored (standard depth > 1/1) and made of regenerated wool or more than 20% silk.</p> <p>This criterion does not apply to white products, to products that are neither dyed nor printed, to furniture fabrics, curtains or similar textiles intended for interior decoration.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 E04 (acid and alkaline, comparison with multi-fibre fabric).</p>	<p>The colour fastness to perspiration (acid and alkaline) shall be at least level 3-4 (colour change and staining).</p> <p>A level of 3 is nevertheless allowed when fabrics are both dark colored (standard depth > 1/1) and made of regenerated wool or more than 20% silk.</p> <p>This criterion does not apply to white products, to products that are neither dyed nor printed, to furniture fabrics, curtains or similar textiles intended for interior decoration.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 E04 (acid and alkaline, comparison with multi-fibre fabric).</p>	

Discussion

This criterion was not changed in the last revision. Comments from the initial stakeholder questionnaire indicated that the present level is appropriate. The criterion is similar to the criterion in the Blaue Engel.

Consultation questions

1. Do you agree that no changes should be made to the criterion or some form revision needed?

CURRENT CRITERION 37: COLOUR FASTNESS TO WET RUBBING

Major proposed changes	No change currently proposed	
Present criterion, Decision 2009	Suggested criterion	
<p>The colour fastness to wet rubbing shall be at least level 2-3. A level of 2 is nevertheless allowed for indigo dyed denim.</p> <p>This criterion does not apply to white products or products that are neither dyed nor printed.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.</p>	<p>The colour fastness to wet rubbing shall be at least level 2-3. A level of 2 is nevertheless allowed for indigo dyed denim.</p> <p>This criterion does not apply to white products or products that are neither dyed nor printed.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.</p>	

Discussion

This criterion was not changed in the last revision. Comments from the initial stakeholder questionnaire indicated that the present level is appropriate. The criterion is similar to the first part of criterion in the Blaue Engel. (point 3.4.4 include both wet and dry rubbing).

Consultation questions

1. Do you agree that no changes should be made to the criterion or some form revision needed?

CURRENT CRITERION 38: COLOUR FASTNESS TO DRY RUBBING

Major proposed changes	No change currently proposed	
Present criterion, Decision 2009	Suggested criterion	
<p>The colour fastness to dry rubbing shall be at least level 4.</p> <p>A level of 3-4 is nevertheless allowed for indigo dyed denim.</p> <p>This criterion does not apply to white products or products that are neither dyed nor printed, or to curtains or similar textiles intended for interior decoration.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.</p>	<p>The colour fastness to dry rubbing shall be at least level 4.</p> <p>A level of 3-4 is nevertheless allowed for indigo dyed denim.</p> <p>This criterion does not apply to white products or products that are neither dyed nor printed, or to curtains or similar textiles intended for interior decoration.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.</p>	

Discussion

This criterion was not changed in the last revision. Comments from the initial stakeholder questionnaire indicated that the present level is appropriate. The criterion is similar to the last part of criterion in the Blaue Engel (point 3.4.4).

Consultation questions

1. Do you agree that no changes should be made to the criterion or some form revision needed?

CURRENT CRITERION 39: COLOUR FASTNESS TO LIGHT

Major proposed changes	<ul style="list-style-type: none"> Should baby clothing in general be exempted from this requirement?
Present criterion, Decision 2009	Suggested criterion
<p>For fabrics intended for furniture, curtains or drapes, the colour fastness to light shall be at least level 5. For all other products the colour fastness to light shall be at least level 4.</p> <p>A level of 4 is nevertheless allowed when fabrics intended for furniture, curtains or drapes are both light coloured (standard depth < 1/12) and made of more than 20% wool or other keratin fibres, or more than 20% silk, or more than 20% linen or other bast fibres.</p> <p>This requirement does not apply to mattress ticking, mattress protection or underwear.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 B02.</p>	<p>For fabrics intended for furniture, curtains or drapes, the colour fastness to light shall be at least level 5. For all other products the colour fastness to light shall be at least level 4.</p> <p>A level of 4 is nevertheless allowed when fabrics intended for furniture, curtains or drapes are both light coloured (standard depth < 1/12) and made of more than 20% wool or other keratin fibres, or more than 20% silk, or more than 20% linen or other bast fibres.</p> <p>This requirement does not apply to mattress ticking, mattress protection or underwear.</p> <p>Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 B02.</p>

Discussion

This criterion was not changed in the last revision. Comments from the initial stakeholder questionnaire indicated that the present level is appropriate. The criterion is similar to the criterion in the Blaue Engel.

Underwear is not covered by the criterion. The reason for this is that it is not exposed as much to the sun as other kind of clothing. Some license holders have stated that the same argument could be used to exempt baby clothing since they do not normally come into contact with direct sun for long periods. It has therefore been suggested that baby clothing in general is exempted from this requirement.

Consultation questions

1. Do you agree that no changes should be made to the criterion or some form revision needed?

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4.0 Proposals for new criteria areas

In this section new areas suggested to be included in the criteria document are discussed and presented. These are in addition to the proposed new criterion 10 which addresses the requirements of Article 6(6) and 6(7) of the Ecolabel Regulation. The new criteria areas proposed for this revision comprise:

- Corporate Social Responsibility (CSR) criteria
 - CSR Criteria 1 - Environmental management practices
 - CSR Criteria 2 - Human rights
 - CSR Criteria 3 - Labour rights, working agreements and salaries
 - CSR Criteria 4 - Occupational safety and health
- Ecodesign improvements
 - Design for durability
 - Design for recycling
- Consumer labeling
 - Energy saving advice
 - Avoidance of air freight

These new proposals have been formulated in response to the findings of the preliminary report. Specific considerations were current industry best practices, consumer expectations and the LCA findings identifying the key areas of environmental impact associated with textile production.

4.1 Corporate Social Responsibility (CSR) related criteria

Setting CSR criteria are relative new to the EU Ecolabel. But for the production of textiles CSR related issues are of great importance when it comes to customers expectations – which have become increasingly sensitised in recent years to social and environmental issues - and in order to avoid situations where EU Ecolabeled products may be produced by companies who have not addressed these issues. This could lead to bad press and, based on the recent experiences of a number of high profile brands and retailers, would reflect badly on the reputation of the EU Ecolabel.

CSR issues also 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. Leading clothing retailers are also active in auditing their sub-suppliers performance due to the high consumer profile of these issues. CSR criteria would re-enforce and reward this work.

This is also an area where it will be difficult for the Competent bodies to evaluate documentation or to evaluate findings from audits. Hence the verification and documentation is suggested either as a declaration of compliance for all productions sites or for more complex supply chains for compliance with recognised independent compliance schemes. – for example, the Global Social Compliance Programme or the Business Social Compliance Initiative (both of which were highlighted in the preliminary report).

Codes of Conduct developed by organisations such as the Business Social Compliance Initiative (BSCI) and the Global Social Compliance Programme (GSCP) specifically address human rights, labour rights, working agreements and salaries and occupational health and safety issues.

However, of these two major schemes, the GSCP Code is only subject to second party verification following self-assessment whereas the BSCI is third party verified. Elements of environmental schemes such as GOTS and Oeko-tex 1000 also address CSR issues and, provided that third party verification has been carried out, could be used as a harmonised compliance route.

This 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 it may be questioned if the declaration is correct the Competent Bodies can always request the documentation backing the declaration.

Consultation questions – CSR criteria 1-4

1. Do you agree with the scope and coverage of the proposed CSR criteria?
2. Are there specific areas of CSR compliance that are not covered or which should be omitted?
3. Are the compliance and verification routes workable? If no, how could they be improved?
Are there suitable alternatives?

CSR CRITERIA 1 – EMISSIONS TO AIR AND WATER

Major proposed changes	New criteria which are proposed to absorb criteria 33. Harmonised third party verification is proposed as an option.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p>It must be documented that all major manufacturing sites involved in the manufacturing of the textile product in question</p> <ul style="list-style-type: none"> • Has an Environmental Management System in place in order to manage and report on environmental impacts • Complies with national waste water and air emission standards or are approved in accordance with the national environmental legislation for the countries where manufacturing is undertaken. • Has mapped the major and most critical emission sources to water and air (the sources may be reported by a list and as an indicated on a map). • Has introduced preventive measures to reduce or eliminate waste water and air emissions (all preventive measures must be reported). • Has established an energy management plan, supported by the monitoring and benchmarking of performance against specific targets set in the management plan to reduce energy use • Has established an water management plan, supported by the monitoring and benchmarking of performance against specific targets set in the management plan to reduce energy use • Has established an waste management plan, supported by the monitoring and benchmarking of performance against specific targets set in the management plan to minimise textile waste arisings • Has provided training to the workforce on environmental and health issues and hazards

	<p>Assessment and verification: The producer shall provide a declaration of compliance, together with a list of all the major and most critical emissions sources and a plan with preventive measures to reduce or eliminate the emissions. <i>Harmonised verification options to be agreed/added here.</i></p>
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Discussion

Clothing brands and retailers may source fibres and textiles from a range of sub-suppliers and manufacturing sites in many different parts of the world. In some countries environmental management practices may be less stringent than in the European Economic Area. This CSR criteria would require the implementation of best practice in environmental management practices by manufacturers and suppliers.

Both Oeko-tex 1000 and the Global Social Compliance Programme (GSCP) address environmental management issues and, provided that third party verification has been carried out, could be used as a compliance route in order to reduce the burden on Competent Bodies. The GSCP Environmental Reference Code is one possible compliance route and appears to offer some distinct advantages in terms of how it assesses compliance. The Reference Code Requirements define three levels of ‘generic’ compliance:

1. Awareness and compliance
2. Pro-active management and performance improvement
3. Leading practice

Each level of compliance is further defined in the GSCP documentation.

In a similar fashion to H&M and Timberland who audit, inspect and rank suppliers’ performance use of this approach would make it possible for other brands and retailers with multiple sub-suppliers to verify against a selected compliance level. GSCP Environmental Code Level 2 would represent a pro-active approach to environmental management which might be considered to place a supplier in the upper quartile of practices and is therefore proposed as a possible compliance level for this criteria.

Detailed reference requirements are then provided for eleven separate areas of environmental performance which each also being graded according to three levels of compliance:

- Environmental Management System
- Energy Use, Transport and Greenhouse Gases (GHGs)
- Water use
- Wastewater effluent
- Emissions to air
- General
- Ozone Depleting Substances (ODS)
- Waste management
- Pollution Prevention / Hazardous and Potentially Hazardous Substances
- Major incident prevention and management
- Contaminated land/ Soil and groundwater pollution prevention
- Land use and biodiversity
- Nuisances

The criteria could focus on specific areas of compliance – for example, 1, 3, 4, 5, 6 and 7 – or could require compliance with all areas of performance. It is proposed that the monitoring and management of energy and water use form a compliance requirement, which would take the place of the existing criterion 33.

Waste management in order to minimise textile waste during manufacturing was identified by the preliminary report as a significant issue. This could be addressed as a specific and distinct issue for which a waste management plan could be required to have been put in place by manufacturers.

CSR CRITERIA 2 - HUMAN RIGHTS

Major proposed changes	New criteria proposal. Harmonised third party verification is proposed as an option.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p>Documented compliance with the international labour standards as defined by the ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up:</p> <ol style="list-style-type: none"> 1. ILO convention C-29 Forced Labour Convention, 1930 2. ILO convention C-87 Freedom of Association and Protection of the Right to Organise Convention, 1949 3. ILO convention C-98 Right to Organise and Collective Bargaining Convention, 1949 4. ILO convention C-100 Equal Remuneration Convention, 1951 5. ILO convention C-105 Abolition of Forced Labour Convention, 1957 6. ILO convention C-111 Discrimination (Employment and Occupation) Convention, 1958 7. ILO convention C-138 Minimum Age Convention, 1973 8. ILO convention C-182 Worst Forms of Child Labour Convention, 1999 <p><i>Assessment and verification: The producer shall provide a declaration of compliance.</i></p>

Discussion

Almost all the major textile producing countries have ratified the most important human rights conventions. Thus it is relevant to require that it must be documented that all major suppliers in the supply chain are in compliance with the listed ILO Conventions.

Codes of conduct developed by organisations such as the Global Social Compliance Programme and the Business Social Compliance Initiative (BSCI) address human rights issues and, provided

that third party verification has been carried out, could be used as a compliance route in order to reduce the burden on Competent Bodies.

The GSCP Social Reference Code has emerged as an auditing tool for manufacturers, brands and retailers. It consists of seven distinct themes which incorporate the listed ILO conventions:

- Forced, bonded, indentured and prison labour
- Child labour
- Freedom of association and the effective recognition of the right to collective bargaining
- Discrimination, harassment and abuse
- Health and safety
- Wages, benefits and terms of employment
- Working hours

Unlike the GSCP Environmental Requirements the Code does not include a grading of performance and so compliance would be required with specified themes or all seven themes. The GSCP Social Reference Code, as well as BSCI Code of Conduct and Oeko-tex 1000, are therefore proposed for further investigation as possible harmonised compliance routes alongside the main ILO Conventions.

CSR CRITERIA 3 - LABOUR RIGHTS, WORKING AGREEMENTS AND SALARIES

Major proposed changes	New criteria proposal. Harmonised third party verification is proposed as an option.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p>All suppliers in the supply chain shall fulfil the following:</p> <ul style="list-style-type: none"> • All workers have an employment contract. • The basic salary of the supplier's workforce at least comply with the minimum wages for normal working hours in the country in question. • Maternity leave is guaranteed and normal working hours are included in the employment contracts with the workforce of all suppliers. <p><i>Assessment and verification: The producer shall provide a declaration of compliance.</i></p>

Discussion

Textile companies are in relation with their CSR reporting presenting documents for which percentage of supplier's workforce has got an employment contract. H&M has in their 2010 CSR Report [H&M 2010] reported to the question if all workers have employment contract at the suppliers that 61 and 59 % of the workforce have in the years 2009 and 2010, respectively.

Codes of conduct developed by organisations such as the Global Social Compliance Programme and the Business Social Compliance Initiative (BSCI) address labour issues and, provided that third party verification has been carried out, could be used as a compliance route in order to reduce the burden on Competent Bodies. The GSCP Social Reference Code, as well as BSCI Code of Conduct and Oeko-tex 1000, are therefore proposed for further investigation as possible harmonised compliance routes alongside the main ILO Conventions.

CSR CRITERIA 4 - OCCUPATIONAL SAFETY AND HEALTH

Major changes	New criteria proposal. Harmonised third party verification is proposed as an option.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p>It must be documented by all suppliers in the supply chain that:</p> <ul style="list-style-type: none"> • Suppliers and specially the spinning houses do comply with ILO Convention no. 148 (Working Environment (Air Pollution, Noise and Vibration) and comply with national Threshold Limit Values for noise. • Suppliers have provided training to the workforce on environmental and health issues and hazards. Suppliers shall undertake sufficient training in waste management, handling and disposal of chemicals and other dangerous materials. <p><i>Assessment and verification: The producer shall provide a declaration of compliance.</i></p>

Discussion

Codes of conduct developed by organisations such as the Global Social Compliance Programme and the Business Social Compliance Initiative (BSCI) address occupational safety and health issues and, provided that third party verification has been carried out, could be used as a compliance route in order to reduce the burden on Competent Bodies.

The GSCP Environment Requirements (under the 'generic' requirements) are one possible compliance route alongside ILO Convention 148. The BSCI Code of Conduct and Oeko-tex 1000 will also be investigated.

4.2 DESIGN FOR DURABILITY

Major changes	New criteria proposal.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p><i>For consumer products the end-retailer would need to demonstrate that they had considered and implemented at least xx design improvement features that would make the product more durable for the consumer and have the potential to extend its useful life. Options could include:</i></p> <ul style="list-style-type: none"> • <i>Stitching patterns</i> • <i>Fabric re-enforcement in areas of wear</i> • <i>Yarn selection and knitting patterns to reduce piling</i> • <i>Other suggested design innovations...</i> <p><i>Spare features such as fastenings and zips should also be made available, either to be provided with the product upon sale or via retailers or direct communication routes e.g. websites.</i></p> <p><i>For specific high value garments (to be specified) repair services should be made available and/or promoted to consumers via retailers and direct communication routes e.g. websites. Repair services could be provided directly or via affiliations.</i></p> <p><i>Assessment and verification: A design report is to be provided by the manufacturer and/or retailer identifying options, their potential benefit and the selected design feature(s). For specified types of garments evidence should also be provided for the availability of a repair service</i></p>

Discussion

Clothing design for greater product durability was highlighted by the preliminary report as a significant possible area of improvement. There could be the potential to encourage design innovation in line with areas of product innovation and differentiation by front runner brands such as US clothing brand Timberland who, for example, promote the additional durable features of their jean products. Features could include double or triple stitching and the re-enforcement of areas of wear.

Whilst fixtures such as buttons and zips were not highlighted by the selected LCA studies as having significant environmental impacts from a production perspective, their loss or failure could result in an earlier disposal of the garment. A criteria could therefore be created that promotes greater longevity of garments by promoting the availability of spares – e.g. branded buttons, fasteners, zips – and aftercare repair services. The latter may be particularly applicable for higher value products e.g. outdoor clothing manufacturers such as the North Face offer this service via licensed retailers.

The most effective features and services to address, and the consumers perspective on maximising the lifespan of garments, will both require further investigation with input from stakeholders in order to further refine this criteria.

Consultation questions

1. Should this criterion be considered within the scope of the revision?
2. Is the area of focus correct? If not, what should it consider?
3. Is the proposed approach workable? If not, how could it be improved?
4. Are you aware of other industry examples?

4.3 DESIGN FOR RECYCLING

Major changes	New criteria proposal.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p><i>It is proposed that this criteria is applied to specific products in combination with a brand, retailer or manufacturers take-back route. Evidence would need to be provided based on feedback from remanufacturers on design improvements that would facilitate more efficient recovery of the fibres.</i></p> <p><i>Assessment and verification: Design report to be provided by the manufacturer and/or retailer identifying options, their potential benefit and the selected design feature(s) in conjunction with a specific take-back route.</i></p>

Discussion

This specific area was highlighted by the preliminary report as having the potential to complement closed loop recycling schemes for fibres. It would also represent a route to address the high/rising level of EU textile waste arisings.

The EU Ecolabel could promote the recycling of textiles by ensuring that EU Ecolabeled textiles can technically be recycled and/or by promoting the recovery and recycling of textiles, potentially through a combination of consideration at the design and material selection stage and through the promotion of retailer take-back schemes. Best practice is evidenced by US outdoor clothing brand Patagonia 'Common threads' and 'Capilene' polyester jacket recycling programmes. The product has been designed to form part of a closed loop garment take-back system to recover and chemically recycle the polyester fibre.

Consideration at an early design and materials selection stage can contribute to the design of closed loop recycling systems – so, for example, nylon 6 is technically currently preferable to nylon 6.6 but the availability of chemical recycling options is understood to currently be very limited. The ability to recycle fibre blends may also be an area for consideration – although often blends are chosen because they confer a fabric with benefits during the use phase.

Specific design considerations, the fibres/fabrics to which this criteria might realistically be applied and industry verification routes are to be discussed and investigated further.

Consultation questions

1. Should this criterion be considered within the scope of the revision?
2. Is the proposed approach workable? If not, how could it be improved?
3. Are you aware of other industry examples?

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4.4 ENERGY SAVING ADVICE

Major changes	New criteria proposal.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p><i>It is proposed that this criteria is fulfilled by the consumer labeling of garments and products:</i></p> <ul style="list-style-type: none"> - <i>Temporary labeling and packaging should be used to promote consumer behaviour that will reduce washing temperatures and detergent use, as well as promoting natural drying of textiles.</i> - <i>Permanent GINETEX labeling should be used to support the energy saving aims of the criteria e.g. by lowering the advised washing temperature or by providing specific supporting advice in text form.</i> <p><i>Assessment and verification: Evidence of labeling materials that accompany specific product lines is to be provided.</i></p> <p><i>This should be supported by technical evidence of the potential benefits and practicality of the proposed measures for the targeted garment or fabric lines.</i></p>

Discussion

The preliminary report highlighted the use phase as the most significant phase for textile environmental improvements. Although user behavior is not within the remit of the EU Ecolabel to regulate, the whole life significance of the use phase does suggest that opportunities to influence consumer choices should be explored.

One option for influencing user behavior is to provide consumers with information on how to save energy or use less detergent. This approach has been adopted by UK retailer Marks & Spencers as part of their Plan A programme. Consumers have been encouraged to wash clothing at 30°C or less. This approach could be reflected in the temporary labeling and packaging provided with

products or by using the GINETEX labelling stitched into products in order to provide energy and/or washing advice.

Consultation questions

1. Should this criteria be considered within the scope of the revision?
2. Is the proposed approach workable? If not, how could it be improved?
3. Are you aware of other industry examples?

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4.5 AVOIDANCE OF AIR FREIGHT

Major changes	New criteria proposal.
Present criterion, Decision 2009/567	Suggested criterion
None currently	<p><i>It is proposed that this criteria is fulfilled by text accompanying the ecolabel that specifies that no fibre or fabric element of the finished product has been air freighted up to the point of sale. Retailers may also wish to provide their own separate labeling.</i></p> <p><i>Assessment and verification: Documentary evidence to be provided of shipping and transit routes for fibres, finished textiles and/or finished products.</i></p>

Discussion

The preliminary report highlighted how the distribution phase is responsible for about 10% of the overall environmental impacts of textile products. The LCA studies selected assumed that long distance shipment is dominated by shipping (92%). Air transportation was assumed to be 8%. According to the LCA studies selected, per tonne-kilometre, air transportation has an approximately 100 times greater climate change impact than shipping [IMPRO, 2009].

The LCA findings showed a reduction in the environmental impact of approximately 40% if the air freight was lowered to a 4% modal share of distribution. Whilst care would need to be taken to ensure that a new environmental burden is created if clothes that are shipped require additional biocide treatments, the evidence still appears to point to there being a significant benefit.

Whilst the modal split may vary between product lines and retailers, and the Ecolabel should not be used to restrict trade, it is possible that an approach could be adopted similar to food labeling initiatives in the UK. Products that have been air freighted are identified on product labels. In this way consumer choice and transparency are promoted.

Consultation questions

1. Should this criteria be considered within the scope of the revision?
2. Is the proposed approach workable? If not, how could it be improved?
3. Are you aware of other industry examples?

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Appendix 1 – Dyes

17. 1: Impurities

The levels of ionic impurities in the dyes used shall not exceed the following:

Ag 100 ppm	Hg 4 ppm;
As 50 ppm	Mn 1 000 ppm
Ba 100 ppm	Ni 200 ppm
Cd 20 ppm	Pb 100 ppm
Co 500 ppm	Se 20 ppm
Cr 100 ppm	Sb 50 ppm
Cu 250 ppm	Sn 250 ppm
Fe 2 500 ppm	Zn 1 500 ppm.

Any metal that is included as an integral part of the dye molecule (e.g. metal complex dyes, certain reactive dyes, etc.) shall not be considered when assessing compliance with these values, which only relate to impurities.

17.2: Azo dyes

Aryl amines MAK III, category 1 and 2 with CAS no:

4-aminodiphenyl (92-67-1)	2,4-diaminoanisol (615-05-4)
Benzidine (92-87-5)	4,4'-diaminodiphenylmethane (101-77-9)
4-chloro-o-toluidine (95-69-2)	3,3'-dichlorobenzidine (91-94-1)
2-naphtylamine (91-59-8)	3,3'-dimethoxybenzidine (119-90-4)
o-amino-azotoluene (97-56-3)	3,3'-dimethylbenzidine (119-93-7)
2-amino-4-nitrotoluene (99-55-8)	3,3'-dimethyl-4,4'-diaminodiphenylmethane (838-88-0)
p-chloroaniline (106-47-8)	

p-cresidine	(120-71-8)	2,4-diaminotoluene	(95-80-7)
4,4'-oxydianiline	(101-80-4)	2,4,5-trimethylaniline	(137-17-7)
4,4'-Methylene-bis-(2-chloroaniline) (101-14-4)		4-aminoazobenzene	(60-09-3)
4,4'-thiodianiline	(139-65-1)	o-anisidine	(90-04-0)
o-toluidine	(95-53-4)	2,4-Xylidine	(95-68-1)
		2,6-Xylidine	(87-62-7)

17.3 Potentially sensitising dyes

C. I. Disperse Blue 1	C. I. Disperse yellow 1
C. I. Disperse Blue 3	C. I. Disperse yellow 3
C. I. Disperse Blue 7	C. I. Disperse yellow 9
C. I. Disperse Blue 26	C. I. Disperse yellow 39
C. I. Disperse Blue 35	C. I. Disperse yellow 49
C. I. Disperse Blue 102	
C. I. Disperse Blue 106	
C. I. Disperse Blue 124	
C. I. Disperse Brown 1	
C. I. Disperse Orange 1	
C. I. Disperse Orange 3	
C. I. Disperse Orange 37	
C. I. Disperse Orange 76	
C. I. Disperse Red 1	
C. I. Disperse Red 11	
C. I. Disperse Red 17	

17.4. Dyes that are carcinogenic, mutagenic or toxic to reproduction

Dyes classified as carcinogenic may not be used:

- C.I. Basic Red 9,
- C.I. Disperse Blue 1,
- C.I. Acid Red 26,
- C.I. Basic Violet 14,
- C.I. Disperse Orange 11,
- C. I. Direct Black 38,
- C. I. Direct Blue 6,
- C. I. Direct Red 28,
- C. I. Disperse Yellow 3.

No use is allowed of dye substances or of dye preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):

- R40 (limited evidence of a carcinogenic effect),
- R45 (may cause cancer),
- R46 (may cause heritable genetic damage),
- R49 (may cause cancer by inhalation),
- R60 (may impair fertility),
- R61 (may cause harm to the unborn child),
- R62 (possible risk of impaired fertility),
- R63 (possible risk of harm to the unborn child),
- R68 (possible risk of irreversible effects),

17.5 Dyes that are hazardous to aquatic ecosystems

No use is allowed of dyestuffs that are assigned or may be assigned at the time of application with any of the following risk phrases

— R50: Very toxic to aquatic organisms

— R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

— R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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