

European Commission Green Public Procurement
(GPP) Training Toolkit
- Module 3: Purchasing Recommendations



Textiles

Background Product Report

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Introduction

This background product report forms part of the European Commission's **GPP Training Toolkit Module 3**, which presents recommended GPP purchasing criteria for 11 priority product and service groups.

This document complements the [Product Sheet on textiles](#), by providing more in-depth information on why the purchasing recommendations included within the Product Sheet have been set. The Product Sheets themselves contain only the information that is strictly necessary for contracting authorities to incorporate environmental considerations in their tender procedures.

Where possible, the criteria presented in Module 3 will mirror the criteria underlying the **European Ecolabel**. Where the European Ecolabel does not cover a product/service group, other criteria sources (such as further ecolabels or national guidance) may be used.

For each product/service group two sets of criteria are presented:

- **Core criteria** – these are designed to be used by any European contracting authority. They address the most significant environmental impacts, and are designed to be used with minimum additional verification effort or cost increases
- **Comprehensive criteria** – these are intended for use by authorities who wish to purchase the best environmental products available on the market, and may require additional administrative effort or imply a slight cost increase as compared to the purchase of other products fulfilling the same function.



1 Scope

This report covers all products covered by the European Ecolabel for textile products¹, namely:

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. Wall and floor coverings are excluded;

Fibres, yarn and fabric: intended for use in textile clothing and accessories or interior textiles.

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.

2 Key environmental and health impacts²

Most information sources on textiles focus on the environmental impacts related to the production and processing of textiles, and/or possible health impacts related to the use of the products themselves. In many cases these two impact areas overlap as they derive from the use of certain chemicals and other substances which may have both environmental and health impacts.

A great variety of material types are used in today's textile industry, some naturally grown, and some synthetically produced. Both the production/cultivation and then the processing of such materials are highly varied and consequently have a variety of different potential impacts. As with foodstuffs, for naturally grown fibres such as cotton, the use of pesticides and fertilisers (organic or non-organic production) is of particular importance from an environmental perspective, however the processing and "finishing" of products is also significant. For synthetic fibres concerns relate to both the chemicals used to manufacture the products as well as processing and "finishing".

2.1. Fertilisers and pesticides

Modern agriculture, based on monocultural practices, requires heavy pesticide and fertiliser use, since monocultures invite pests and draw a lot of nutrients out of the soil³. Cotton is a particularly chemical intensive crop – despite accounting for just

¹ Commission Decision of 15 May 2002 establishing the ecological criteria for the award of the Community eco-label to textile products and amending Decision 1999/178/EC

² Much of the information here taken from the Handbook of Sustainable Textile Purchasing: <http://www.eco-forum.dk/textile-purchase/index.htm>

³ State of the World 2002. Worldwatch Institute. 2002.



2.5% of global cropland, cotton is responsible for the release of 16% of global insecticides (by market share)⁴.

Locally, substance use raises levels of nitrates and pesticides (both hazardous to public health) in groundwater and reduces soil quality. Certain fertilisers can acidify the soil, a condition that leaches out key nutrients and compromises the long-term productivity of the land. Worldwide, farmers use 10 times more fertiliser today than in 1950, and spend roughly 17 times as much - adjusted for inflation - on pesticides. Yet the effectiveness of these applications has plummeted - a tenfold increase in fertiliser use has coincided with just a threefold increase in food production, while the share of the harvest lost to pests remains largely the same as in 1950 despite the use of much greater quantities of pesticide⁵.

Pesticides are biological, physical or chemical substances or mixtures of substances intended for preventing, destroying, repelling or mitigating pests. Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, bactericide and various other substances used to control specific pests (such as insects, weeds, fungi, bacteria, mice, etc.).

By their very nature pesticides can cause harm to humans, animals or the environment because they are designed to kill or otherwise adversely affect living organisms⁶. The World Health Organization estimates that every year 3 million people suffer from severe pesticide poisoning, matched by a greater number of unreported, mild cases that result in acute conditions such as skin irritation, nausea, diarrhoea, and breathing problems⁷. These are, however, only the health problems caused by direct use and contact with pesticides. Pesticides also have ecotoxic effects when such products pollute soils and water-courses and, as a consequence, bioaccumulate and are biomagnified⁸ through the food chain causing hazardous effects on animals and consumers.

Fertilisers are compounds given to plants to promote growth; they are usually applied either via the soil, for uptake by plant roots, or by foliar feeding, for uptake through leaves. Fertilisers can be either organic (from composted vegetal matter and/or animals dropping) or inorganic (such as peat, mineral depositions or chemically produced compounds) and they contain plant nutrients in concentrated form.

Although the health risk of fertilisers is smaller than that of pesticides, their extensive and abusive use is responsible for important environmental impacts such as:

⁴ *The Deadly Chemicals in Cotton*, a Report by the Environmental Justice Foundation in collaboration with the Pesticide Action Network UK

⁵ State of the World 2002. Worldwatch Institute. 2002.

⁶ US Environment Protection Agency (EPA). <http://www.epa.gov/pesticides/about/index.htm>.

⁷ State of the World 2002. Worldwatch Institute. 2002.

⁸ Bioaccumulation occurs when an organism absorbs a toxic substance at a rate greater than that at which the substance is excreted or degraded biologically. Biomagnification is the increase in concentration of a substance that occurs in a food chain as a consequence of: food chain energetics and a low (or non-existent) rate of excretion/degradation of the substance. Although sometimes used interchangeably with 'bioaccumulation,' an important distinction is drawn between the two. Bioaccumulation occurs within an organism, and biomagnification occurs across trophic (food chain) levels.



- Water pollution and eutrophication⁹ by nitrate and phosphate loss through leaching which causes toxic algae blooms,
- Species diversity reduction and the long-term disruption of aquatic ecosystems,
- Acidification¹⁰ of soil and water, which helps mobilise heavy-metals that can then enter food chains,
- Reduction of natural soil productivity due to the loss of plant nutrients.

2.2. Substances used in the processing of textiles

With such a huge variety of different materials used in the production of modern textiles¹¹, there is a correspondingly large variety of processing techniques. As well as individual techniques relating to certain fibres, processes such as dyeing, finishing, bleaching, softening, increasing fire resistance tend to be chemical intensive processes.

A great many different substances are used in the processing of fibres which have negative environmental impacts when released into either water or air¹². They are often poorly degradable and toxic in the aquatic environment, and can also cause health problems to users if remaining as residues in textiles, for example through the use of certain potentially carcinogenic amines created during the dyeing process.

In most cases these impacts can be considerably reduced through using different techniques, substances or through appropriate waste treatment.

2.3. Water and energy use

Considerable amounts of water and energy are used in the processing of different materials in the textile production chain. Water is of course also used in great quantities for irrigation during the growing of natural fibres, depending on the localised rainfall patterns.

A report by the Danish Environmental Protection Agency¹³ has indicated that there is a large potential in the industry for water and energy savings, including energy

⁹ Eutrophication is a process whereby water bodies, such as lakes, estuaries, or slow-moving streams receive excess nutrients that stimulate excessive plant growth

¹⁰ Acidification is the build-up of excess sulphuric and nitric acids in soils, waters, and air caused by acid depositions. These depositions originate from anthropogenic (human) emissions of mainly sulphur dioxide, nitrogen oxides, and ammonia from, for example, the use of animal manure and other soil improvers in agriculture. Acid depositions have negative impacts on water, forests, and soil. They cause defoliation and weakening of trees; they can also change soil and water pH mobilising heavy metals and other harmful substances with toxic effects on soil and aquatic organisms; and also damage buildings and monuments.

¹¹ The European Ecolabel includes criteria specific to the following fibres: acrylic, cotton and other natural cellulosic seed fibres, elastane, flax and other bast fibres, greasy wool and other keratin fibres, man-made cellulose fibres, polyamide, polyester and polypropylene

¹² The European Ecolabel has 33 criteria related to certain substances used in production and processing of textiles. The full criteria list of the European Ecolabel is included in Annex I.

¹³ *Danish experience. Best Available Techniques - BAT - in the clothing and textile industry.* Document prepared for the European IPPC Bureau and the TWG Textile by the Danish Environmental Protection Agency



reclamation, the reuse of hot and waste water and the use of mechanical techniques not requiring water. The report indicates that in a Danish pigment print-house, the implementation of a number of water saving measures has reduced annual consumption of water by approximately 25,000 m³ (55% reduction).

However, this issue is not dealt with in detail by any of the major ecolabelling schemes, without any specific limit values set. In terms of procurement, therefore, it is currently impractical to specifically focus on this aspect.

2.4. Recycled fibres

The amount of textile products purchased has risen rapidly in recent years (in the UK consumption has risen by 60% in the last 10 years, making it the country's fastest growing household waste stream).¹⁴

The procurement of textile products which are completely or partly made up of recycled fibres is a useful way to effectively address this growing waste problem and the most direct way to limit the impacts described above by limiting the amount of virgin fibres used.

Table 1. Key environmental impacts – textiles		
Impacts		GPP Approach
<ul style="list-style-type: none"> Air pollution, ozone formation (smog), bioaccumulation or food chain exposure and hazardous effects on aquatic organisms or the increased growth of undesirable aquatic organisms which can degrade water quality, due to the use of certain pesticides and fertilisers in the production of fibres, and substances used during the processing of fibres and final textile products Negative impact on the occupational health of users due to residues of certain substances harmful to human health 	<p>→</p> <p>→</p>	<ul style="list-style-type: none"> Purchase organically produced textiles Purchase used textiles which can be used again for their original purpose or purchase textiles that contain recycled fibres. Purchase textiles which have been produced with a reduced amount of environmentally harmful substances Purchase textiles with lower residues of substances harmful to human health

¹⁴ Textiles Recycling Association – Alan Wheeler



3 Relevant European environmental legislation

There are several pieces of legislation relevant to the textiles industry, particularly in relation to the use of certain chemicals and substances in production.

Council Directive 96/61/EC on Integrated Pollution Prevention and Control requires Member States to regulate certain industrial activities (including the textile industry), by means of granting integrated operating permits.

This integrated approach considers:

- emissions to air, water and soil;
- aspects of waste-management;
- resource and energy efficiency.

A key element of the Directive is the use of Best Available Techniques (BAT). The Directive obliges the European Commission to organise an exchange of information between Member States and industries concerned on BAT. The results of the information exchange for each sector are laid down in so called BAT Reference Documents (BREF). The BREF Textile Processing can be found on the EIPPCB website: <http://eippcb.jrc.es/pages/FActivities.htm>.

Finally, much of the information presented below is taken from the Handbook of Sustainable Textile Purchasing, developed by EcoForum in Denmark.¹⁵

3.1. Organic production

The main EU Regulation on **organic production of agricultural products** (Council Regulation (EEC) No 2092/91) creates the framework for the production, labelling and inspection of organic farm products and foodstuffs. This will be replaced from 1 January 2009 when the newly approved Council Regulation (EC) No 834/2007 will apply. Due to the rapid growth in organic production in recent years, the existing regulations have become insufficient in some respects.

Any agricultural product sold in Europe using the term “organic” must meet certain minimum standards.

In general terms, the organic production criteria set by EU Regulation (2092/91) include:

- Specific procedures to maintain soil fertility and to control pests or other diseases
- Limited use of fertilisers, soil conditioners, pesticides, feed materials, additives, cleaning and disinfection products
- Use of seeds or vegetative propagating material produced by organic production methods
- Exclusion of the use of genetically modified organisms, although it allows a certain contamination from technically unavoidable GMOs
- Original plants produced following organic criteria for at least one generation or, in the case of perennial crops, two growing seasons

¹⁵ http://www.eco-forum.dk/textile-purchase/index_files/Page2018.htm



- Livestock origin, feeding, disease prevention, reproduction, transport, free range and housing conditions.

To complete the framework of organic production, EU Regulation 1804/1999 establishes the rules for production, labelling and inspection of organic livestock products.

The new Regulation (834/2007) is designed to make arrangements simpler for both farmers and consumers. Some of the key changes are as follows¹⁶:

- A new permanent import regime and a more consistent control regime.
- The use of the EU organic logo will be mandatory, but it can be accompanied by national or private logos.
- The place where the products were farmed has to be indicated to inform consumers.
- Food will only be allowed to carry an organic logo if at least 95 percent of the ingredients are organic. Non-organic products will be entitled to indicate organic ingredients on the ingredients list only.
- The use of genetically modified organisms will remain prohibited. It will now be made explicit that the general limit of 0.9 percent for the accidental presence of authorised GMOs will also apply to organic products.

3.2. Substances used for impregnation

Directive 76/769/EEC¹⁷ and its subsequent amendments restrict the use of hazardous substances. Council Directives 79/663/EEC, 83/264/EEC and 2003/11/EC amending or supplementing the Annex to 76/769/EEC, for example restrict the use of tris (2,3 dibromopropyl) phosphate [CAS No 126-72-7], tris-(aziridiny)-phosphin oxide, polybrominated biphenyls (PBB), pentabromodiphenyl ether (pentaBDE) and octabromodiphenyl ether (octaBDE) in fireproofing garments. This, together with other legislation presented below, limits the potentially hazardous substances which may be found in textile products.

3.3. Dyes

Azocolourants make up a significant proportion of the dyes used in textile production, however there are concerns about possible health impacts such as potentially carcinogenic properties. Directive 2002/61/EC amending 76/769/EEC, restricts the use of certain azocolourants, which may produce certain amines, which in turn may pose cancer risks.

¹⁶ For more information see the following press release:

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/807&format=HTML&aged=0&language=EN&guiLanguage=en>

¹⁷ Council Directive 76/769/EEC of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations



Further restrictions were set by Directive 2003/3/EC on the marketing and use of the “blue colourant”, due to its potentially negative impact on the environment, adding a list of restricted “azodyes”. This regulatory framework ensures that the worst of the impacts related to azocolourants are now effectively dealt with and need not be addressed by GPP.

3.4. Certain metals

The use of lead (Directive 89/677/EEC) and cadmium (Directive 91/338/EEC) is also restricted, covering their use in dyes and other applications for textiles.

3.5. REACH and GHS

The new European Chemicals regulation (REACH) was adopted in December 2006. REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH Regulation (EC) No 1907/2006 and Directive 2006/121/EC amending Directive 67/548/EEC were published in the Official Journal on 30 December 2006.

REACH entered into force on 1 June 2007. Enterprises which manufacture or import more than one tonne of a chemical substance per year will be required to register it in a central database administered by the new EU Chemicals Agency.

A new Chemicals Agency, based in Finland, will act as the central point in the REACH system: it will run the databases necessary to operate the system, co-ordinate the in-depth evaluation of suspicious chemicals and run a public database in which consumers and professionals can find information.

In future, this will provide not only a rigorous testing and restriction procedure for all chemicals on the European market, but also provide a highly valuable centralised information source which could be used by contracting authorities.

The "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" is a UN initiative which aims to harmonise the human health and environment information provided by manufacturers worldwide, given the global nature of the trade. This initiative was endorsed by the Plan of Implementation of the World Summit on Sustainable Development (WSSD), adopted in Johannesburg in 2002, with a view to having the system fully operational by 2008.

In the EU, the Commission has adopted a “Proposal for a Regulation of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, and amending Directive 67/548/EEC and Regulation (EC) No 1907/2006” (COM(2007) 355 final). The proposed act aligns the EU system of classification, labelling and packaging substances and mixtures to the United Nations Globally Harmonised System (GHS). It is expected to facilitate global trade and harmonised communication of hazard information of chemicals and to promote regulatory efficiency. It will complement the new REACH Regulation on the registration, evaluation, authorisation and restriction of chemicals. More information can be found on the Commission website at: http://ec.europa.eu/enterprise/reach/ghs_en.htm.



3.6. Waste

Current EU waste policy is based on a concept known as the waste hierarchy. This means that, ideally, waste should be prevented and what cannot be prevented should be re-used, recycled and recovered to the extent feasible, with landfill being used as little as possible. Landfill is the worst option for the environment as it signifies a loss of resources and could become a future **environmental** liability. The waste hierarchy should not be seen as a hard-and-fast rule, particularly since different waste treatment methods can have different environmental impacts. However, the aim of moving towards a recycling and recovery society means moving up the hierarchy, away from landfill and more and more towards recycling and recovery.

The legal framework underpinning this strategic approach includes horizontal legislation on waste management, e.g. the Waste Framework Directive, the Hazardous Waste Directive, as well as the Waste Shipment Regulation. Despite the considerable progress which has been made, overall waste volumes are growing and the absolute amount of waste going into landfill is not decreasing. Article 5 of the EU Landfill Directive already places restrictions on the amount of biodegradable waste (including biodegradable textile waste) that can be sent to landfill in the future.

4 Ecolabels and other criteria sources

4.1. European Ecolabel

Commission Decision 2002/371/EC updated the original criteria for the European Ecolabel for textiles, covering all the products mentioned in Section 1. It was one of the first groups covered by the Ecolabel. According to the Draft Revision Report on the Textile Ecolabel¹⁸, there are currently 68 licences for this product group in Europe. However, a Commission study on the Costs & Benefits of GPP in 2007,¹⁹ could only identify one potential supplier for the product groups researched: police shirts, underpants for military use, coats for hospital staff and cotton roll towels. For other types of textiles purchased by public authorities there will likely be further suppliers of European Ecolabelled products, but not a large number currently. The results of the Costs & Benefits report can be found in Annex II.

Due to the great variety of materials and processing techniques used within the textiles industry, the criteria underlying the Ecolabel are very extensive. The full list of criteria is included in Annex I. There are 33 environmental and health criteria headings, several of which contain more than one specific criterion. In addition there are a number which relate to fitness for use or information appearing on the label.

The environmental criteria are grouped into two sections. The first sets criteria specific to a particular fibre type (acrylic, cotton and other natural cellulosic seed fibres, elastane, flax and other bast fibres, greasy wool and other keratin fibres, man-

¹⁸ *Revision of the Textile Eco-label – Draft final report, July 13th 2007*, Produced by Asqual

¹⁹ *Study on costs/benefits of Green public procurement in Europe*, Öko-Institut & ICLEI 2007, available at: http://ec.europa.eu/environment/gpp/index_en.htm



made cellulose fibres, polyamide, polyester and polypropylene). For other fibres not included in this list there are no specific criteria, although mineral fibres, glass fibres, metal fibres, carbon fibres and other inorganic fibres are excluded from ecolabelled products. The individual fibre criteria are also only applied where the fibre type makes up more than 5% of the total textile weight of the final product.

The second set relates to processes and chemicals, and is applied to all products, although there is a certain acceptance level for residues remaining in recycled fibres. These cover for example the use of dyes, finishing agents, fabric softeners, flame-retardants etc.

Currently the criteria do not demand a specific percentage of cotton to come from organic sources. However, if a product is certified as having at least 50% organic content then it does not need to comply with the criteria on the use of pesticides.

The criteria do not simply apply to the product itself (through testing for residues of harmful substances etc.), but also to the production processes, including emissions to water and air during certain processing stages.

The recent Commission Decision (2007/207/EC) extended the validity of the existing criteria set until 31st May 2008. A revision process is underway led by AFNOR, the French Ecolabel Competent Body. A draft revision document has been prepared which is now the basis of discussions within the European Ecolabelling Board (EUEB).

The latest version of the applicable criteria, for reference, will always be available on the [European Ecolabel website](http://ec.europa.eu/environment/ecolabel/index_en.htm) at http://ec.europa.eu/environment/ecolabel/index_en.htm.

4.2. Öko-Tex

The draft report on revisions of the European Ecolabel criteria contains a detailed comparison with the existing Öko-Tex label (www.oeko-tex.org). This is a private label which has by far the widest coverage of any label in this field in Europe – 53,000 companies were covered in 2005²⁰. The Öko-Tex criteria are outlined in the Öko-Tex Standard 100²¹.

Besides being a private label, a significant difference with the European Ecolabel is that initially it only covered issues relating to the health of users of the final textiles. As explained above, many of the environmental and health concerns overlap substantially, and so many of the criteria underpinning the two labels also overlap. However environmental impacts related to production are not addressed by Öko-Tex and tests are only carried out on the final product.

Organic production is not included in the Öko-Tex standard.

A further difference is that the Öko-Tex Standard 100 sets different limit values for substances depending on the type of garment. Four different categories are given:

- Garments for babies (up to 36 months)
- Garments in regular contact with the skin
- Garments not in regular contact with the skin

²⁰ *Revision of the Textile Eco-label – Draft final report, July 13th 2007*, Produced by Asqual

²¹ http://www.oeko-tex.com/xdesk/ximages/470/16459_100def2007.pdf



- Decoration materials

In 1995 the scheme was extended to address the environmental impacts of production processes – the Öko-Tex Standard 1000 (www.oeko-tex1000.com)²², which labels manufacturing sites. This Standard covers a number of aspects relating to the production site:

- Quality management
- Environmental management
- Certain substances and technology used in production:
 - Prohibited substances
 - Prohibited technologies (printing systems based on heavy benzene, dichromate as oxidising agent to improve colour fastness, chlorinated organic solvents and fluoro chlorinated organic solvents in open systems)
- Water/waste water
- Exhaust air
- Noise
- Energy
- Workplace
- Social criteria

According to the website, there are currently 35 companies which hold the Öko-Tex Standard 1000 certificate.

In 1999 the Öko-Tex Standard 100 Plus was introduced, which enables the labelling of products which meet the Standard 100, and derive from manufacturing sites carrying the Standard 1000 label. It is not clear at this stage how many products are available in Europe which carry this label.

4.3. Other Type I²³ ecolabels

The **Nordic Swan** also covers textile products (Swan label for textiles, skins and leather²⁴), however there are currently not too many label holders. The criteria actually refer directly to those of the European Ecolabel, which all products must meet, with some additional requirements.

²² http://www.oeko-tex.com/xdesk/ximages/470/15540_1000-DEF.pdf

²³ The International Standards Organization (ISO) has categorised the different kind of product labels on the market. “Type 1” labels are those where the underlying criteria are set by an independent body and which are monitored by a certification and auditing process. As such they are a highly transparent, reliable and independent information source for contracting authorities.

Type 1 labels can be used by contracting authorities as the source of criteria, and also as one means of verification as they are compliant with the definition of usable ecolabels used in the Public Procurement Directives, namely that the criteria are developed based on scientific information, the ecolabel is based on a process in which all relevant stakeholder are part, and the ecolabel is open to any stakeholder.

²⁴ <http://www.svanen.nu/Default.aspx?tabName=CriteriaDetailEng&menuItemID=7056&pgr=39>



In particular there is a requirement that all natural vegetable fibres are organically grown.

The **Bra Miljöval** or “**Good Environmental Choice**” label also covers textiles²⁵. Criteria focus on the production processes, and all natural fibres are required to be grown in compliance with organic standards.

4.4. Other GPP guidance on textiles

4.4.1 EKU

The **EKU** criteria for textiles and leather²⁶ present two levels of criteria. The first level (Basic Requirements) is applicable to the complete product range, and the second level (Additional Requirements) is applicable for certain products.

The Basic requirements are based on chemical guidelines issued by Öko-Tex and the Textile Importers’ Association in Sweden, which primarily concern environmental requirements that are measurable in the finished textile.

This approach was decided on as the wide availability of Öko-Tex labelled products greatly simplifies the verification process (see section 5 below). In addition to requirements on producer responsibility and quality assurance, a number of ecological requirements are set. A comprehensive stakeholder process led to the conclusion that these criteria directly addressed the most important environmental and health concerns which could most readily be taken into account by contracting authorities. Certain of these criteria are less strict than the European Ecolabel, others are complementary. The criteria are presented below, together with a comparison with the European Ecolabel in *italics*:

Organic substances

- Azo dyes that can decompose to arylamines prohibited by 2003/3/EC (max. content 30 mg/kg). *This follows the regulatory requirement included within the mentioned Directive – the European Ecolabel goes further and completely bans these, as does Öko-Tex 100.*
- Dispersion dyes that are classified as allergenic (R43) (max. 0 mg/kg additives for textiles intended for children under 3 years, max. content 0.1% by weight; max. 100 mg/kg additives for other textiles, max. content 0.1% by weight). *Covered by the European Ecolabel which bans certain potentially sensitising dyes*
- Certain flame-retardants: PBB, pentaBDE, octaBDE, decaBDE, TRIS, TEPA according to 76/769/EC (max. 0 mg/kg as additive, max. content 0.1% by weight). *PBB and TRIS are already restricted by legislation. The European Ecolabel restricts flame-retardants with certain risk-phrases which would cover these.*
- Organic tin compounds, (max 0 mg/kg as additive, max. content 0.5 mg/kg). *For the European Ecolabel its use is banned in the manufacture of elastane or for the transportation/storage of products. This should cover the major usages.*

²⁵ <http://www.snf.se/pdf/bmv/bmv-textiles-crit.pdf>

²⁶ http://www.msr.se/en/green_procurement/criteria/Furnishing-and-textiles



- Pentachlorophenol and 2,3,5,6 tetrachlorophenol and its salts, (max. content 0.5 mg/kg). *The European Ecolabel restricts the use of pentachlorophenol as a pesticide, and tetrachlorophenol as a biocide.*
- Certain phthalate softeners: DEHP, DBP, BBP (ref:76/769/EC) (max. content 0.1% by weight). *The European Ecolabel sets biodegradability criteria for softeners, which would have the same (but broader) effect.*

Heavy metals

- Lead, (max content 0.5 mg/kg)
- Cadmium according to 76/769/EC, (max. content 0.5 mg/kg)

Other metals

- Nickel according to 2004/96/EG (max. content 0.5 ug/ cm²/week)
- Chromium (VI), (max content 0.5 mg/kg)

For these four criteria relating to metals the European Ecolabel has a different approach. These should only be present in dyes and perhaps water-resistant coverings. For the Flower, lead-based pigments are banned in polypropylene (used for some specialist clothing). There are also restrictions about their use in dyes (The levels of ionic impurities in the dyes used shall not exceed the following: Cd 20 ppm; Cr 100 ppm; Ni 200 ppm; Pb 100 ppm) and in pigments (The levels of ionic impurities for pigments used shall not exceed the following: Cd 50 ppm; Cr 100 ppm; Pb 100 ppm). Finally the European Ecolabel also restricts copper, chromium, and nickel in waste water emissions from the cellulose dyeing process.

Formaldehyde

The emission of formaldehyde from the finished textile must not exceed:

- 20 mg/kg for textiles for children in direct skin contact (<24 months)
- 100 mg/kg for textiles in direct skin contact
- 300 mg/kg for other textiles

Also covered by the European Ecolabel but with tougher limits (especially the proposed revision, which sets even stricter limits)

The Additional Requirements are based on ecolabelling criteria (Swan/European Ecolabel and Good Environmental Choice). These place requirements on fibre production and the manufacturing process. The criteria state that products which meet any of these ecolabels or comply with the Regulation on organic production or IFOAM basic standards would be accepted.



5 Verification issues

Verifying the environmental and health parameters of textile products represents a significant challenge for public authorities. This is particularly difficult for criteria referring to production processes, where compliance cannot be judged by testing the final product itself. Furthermore non-experts would likely struggle with the complexity of the chemical information to be assessed.

In some cases the use of certain chemicals in the production process *can* to some extent be traced by assessing the final product, as residues remain. For pesticides this topic has been addressed by the European Ecolabel draft revision document. In the current criteria it is not specified when the test for pesticide residues should be made, however it notes that “it is well known that pesticides are removed by a simple washing”. The proposal is therefore that the revised criteria should state: “The test should be made on raw cotton, before it comes through any wet treatment”. Whilst certainly appropriate for this function, this revision would present a problem for contracting authorities as a simple test of the final product would no longer be sufficient for verification purposes – the contracting authority would need to request appropriate means of proof, such as test data on raw cotton before wet treatment (particularly challenging if imported from outside Europe), or certification that it has been produced organically. Although this may prove possible there are two further concerns with such an approach:

- a) the supply of organically grown cotton is currently rather small on the market
- b) Setting specific restrictions on cotton may have the effect of favouring other non-natural fibres in textiles where no criteria or verification procedures for production methods are set. This would achieve the opposite of encouraging the use of organically grown cotton.

One potential solution to this problem may be to provide additional weighting at the award stage for organically grown cotton or other natural fibres.

It would not seem realistic to include criteria regarding production processes at the Core level for a number of reasons:

- Obtaining appropriate verification of compliance throughout the supply chain would likely be challenging
- The proportion of suppliers able to comply with the production criteria developed by the European Ecolabel is difficult to assess and therefore product availability is uncertain, especially given the relative scarcity of products carrying the European Ecolabel (see below)
- If only certain criteria underlying the Ecolabel are selected there is a danger of favouring one fibre type over another

For future revisions it may be possible to include additional criteria on production methods within the Core criteria. For the time being these can be included only in the Comprehensive criteria set.

A further difference between the approach of Öko-Tex/EKU and the European Ecolabel is that where Öko-Tex names specific substances which are restricted, in some cases the European Ecolabel sets environmental/health requirements:



- E.g. The European Ecolabel restricts the use of certain flame retardants assigned with certain risk phrases (R40, 45, 46, 49, 50, 51, 52, 53, 60, 61, 62, 63, 68). Öko-Tex instead lists restricted flame-retardants by name: PBB, TRIS, TEPA, pentaDBE, and octaDBE.

The European Ecolabel approach to this is more comprehensive, and also has the advantage of applying equally to other potential substances which may be substituted for certain named flame retardants but which may be equally harmful. However, contracting authorities in the ECU consultation clearly indicated that they would prefer to have substances named directly as this makes checking compliance easier.

A further issue relates to the number of ecolabelled products on the market. At present there are relatively few suppliers of European Ecolabelled products relevant for public purchases. The majority of labelled products are directed at the private clothing market. There are fewer “workwear” products labelled. A Commission study on the Costs & Benefits of GPP in 2007,²⁷ could only identify one potential supplier for the product groups researched: police shirts, underpants for military use, coats for hospital staff and cotton roll towels. For other types of textiles purchased by public authorities there will likely be further suppliers of European Ecolabelled products, but not a large number currently (see the results of the Costs & Benefits study in Annex II).

As a large number of Öko-Tex labelled products are at present available on the market (60,000 license holders), and only few European Ecolabelled products, it seems appropriate for the Core level to recommend specifications for which both the European Ecolabel and Öko-Tex (and Nordic Swan) can demonstrate compliance. In many cases these overlap, however the European Ecolabel criteria tend to be stricter, and often tested higher up the production chain. This would therefore mean that in each case the less strict criterion would need to be used.

6 Cost considerations

A Commission study on the Costs & Benefits of GPP in 2007,²⁸ examined the cost implications of purchasing green (ecolabelled) cleaning products in the textiles sector – looking at the purchases of workwear.

Unfortunately as there are hardly any products on the market carrying the European Ecolabel relevant for contracting authorities in the areas researched (in fact only one supplier), it was not possible to find comparative information.

Although in the private sector purchases of organic clothing tend to be approximately twice as expensive, the one example of public procurement identified (City police of Zürich) indicated that the price differences for police uniforms were negligible – possibly as the costs for textile finishing are lower than for conventional products, offsetting the additional price paid for organic fibres.

²⁷ *Study on costs/benefits of Green public procurement in Europe*, Öko-Institut & ICLEI 2007, available at: http://ec.europa.eu/environment/gpp/index_en.htm

²⁸ *Study on costs/benefits of Green public procurement in Europe*, Öko-Institut & ICLEI 2007, available at: http://ec.europa.eu/environment/gpp/index_en.htm



Additionally the Zürich case study indicated that the quality and user comfort of the green alternative is better than that of the conventional one.

7 Conclusions

7.1. Environmental and health issues

- The European Ecolabel includes a large number of environmental criteria on production processes, considering the variety of different materials used to make final textile products.
- The most important environmental impacts are likely to arise from the use of pesticides during the production process of cotton as well as from the amount of water discharged and the chemical load it carries as a result of textile processing.
- Other important environmental impacts relate to energy consumption, air emissions and solid waste.
- Significant health concerns for end users also exist regarding the use of potentially carcinogenic or sensitising substances in textiles
- The most direct approach for reducing the environmental impacts of textiles is to use recycled fibres or re-use textiles

7.2. Ecolabels, verification aspects and market concerns

- There are currently few European Ecolabelled textile products on the market relevant for contracting authorities. By contrast there are almost 60,000 labelled by Öko-Tex
- Öko-Tex does not include criteria relating to production processes, and is solely concerned with end user toxicity
- The criteria for the European Ecolabel and Öko-Tex regarding end user toxicity differ slightly, with the European Ecolabel criteria being stricter
- The verification of environmental criteria relating to production processes is extremely challenging if products do not carry an ecolabel
- The supply of organically produced natural fibres such as cotton is currently very limited

7.3. Criteria recommendations

- At the Core level, specifications should be set which can be easily verified through reference to either the European Ecolabel or Öko-Tex
- The use of organic cotton should also be encouraged at the Core level, though not in a compulsory way (by referring to it in the award criteria)
- The use of recycled fibres should also be encouraged at the award stage
- Verification procedures are too demanding to include criteria relating to production methods in the Core criteria
- The Comprehensive level should focus more strongly on production methods



8 Recommended criteria options – textile products

For the **Core** criteria products meeting either the Öko-Tex Standard 100 label or the European Ecolabel for textiles will comply with the specifications. Additionally award criteria have been included relating to the use of organically produced cotton and recycled fibres.

The **Comprehensive** criteria include production process and fibre-specific criteria taken from the European Ecolabel in the specifications, with the use of organically produced cotton, recycled fibres and products meeting the full European Ecolabel criteria being encouraged in the award phase.

The full recommended criteria sets can be found in the [Product Sheet](#).

9 Information Sources

- *Commission Decision of 15 May 2002 establishing the ecological criteria for the award of the Community eco-label to textile products and amending Decision 1999/178/EC (2002/371/EC):* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2002/l_133/l_13320020518en00290041.pdf
- *Revision of the Textile Eco-label – Draft final report, July 13th 2007*, produced by Asqual
- Worldwatch Institute: www.worldwatch.org
- US Environment Protection Agency (EPA): <http://www.epa.gov/pesticides/about/index.htm>
- *Handbook of Sustainable Textile Purchasing:* <http://www.eco-forum.dk/textile-purchase/index.htm>
- *Danish experience. Best Available Techniques - BAT - in the clothing and textile industry.* Document prepared for the European IPPC Bureau and the TWG Textile by the Danish Environmental Protection Agency (2002): <http://www2.mst.dk/udgiv/publications/2002/87-7972-009-0/pdf/87-7972-010-2.pdf>
- *The Deadly Chemicals in Cotton*, a Report by the Environmental Justice Foundation in collaboration with the Pesticide Action Network UK: http://www.ejfoundation.org/pdf/the_deadly_chemicals_in_cotton.pdf
- *Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products:* <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1991/R/01991R2092-20000527-en.pdf>
- *Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91:* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_189/l_18920070720en00010023.pdf



- *Council Regulation (EC) No 1804/1999 of 19 July 1999 supplementing Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs to include livestock production:* <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1999/R/01999R1804-19990824-en.pdf>
- *Council Directive of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (76/769/EEC):* <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1976/L/01976L0769-20030215-en.pdf>
- *(Impregnating chemicals) Council Directive 79/663/EEC of 24 July 1979 supplementing the Annex to Council Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to the restrictions on the marketing and use of certain dangerous substances and preparations:* <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31979L0663:EN:HTML>
- *(Impregnating chemicals) Council Directive 83/264/EEC of 16 May 1983 amending for the fourth time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations:* <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31983L0264:EN:HTML>
- *(PentaDBE & octaDBE) Directive 2003/11/EC of the European Parliament and of the Council of 6 February 2003 amending for the 24th time Council Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations (pentabromodiphenyl ether, octabromodiphenyl ether):* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2003/l_042/l_04220030215en00450046.pdf
- *(Azocolourants) Directive 2002/61/EC of the European Parliament and of the Council of 19 July 2002 amending for the nineteenth time Council Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations (azocolourants):* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2002/l_243/l_24320020911en00150018.pdf
- *(Blue colourant) Commission Directive 2003/3/EC of 6 January 2003 relating to restrictions on the marketing and use of "blue colourant" (twelfth adaptation to technical progress of Council Directive 76/769/EEC) (Text with EEA relevance):* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2003/l_004/l_00420030109en00120015.pdf
- *(Lead) Council Directive 89/677/EEC of 21 December 1989 amending for the eighth time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the member states relating to restrictions on the marketing and use of certain dangerous substances and preparations:* <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31989L0677:EN:HTML>
- *(Cadmium) Council Directive 91/338/EEC of 18 June 1991 amending for the 10th time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the*



- marketing and use of certain dangerous substances and preparations:* <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31991L0338:EN:HTML>
- (REACH) *Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC:* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_396/l_39620061230en00010849.pdf
 - (REACH) *Directive 2006/121/EC of the European Parliament and of the Council of 18 December 2006 amending Council Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances in order to adapt it to Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency:* http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_396/l_39620061230en08500856.pdf
 - *Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control:* <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1996/L/01996L0061-20060224-en.pdf>
 - *Öko-Tex Standard 100:* http://www.oeko-tex.com/xdesk/ximages/470/16459_100def2007.pdf
 - *Öko-Tex Standard 1000:* http://www.oeko-tex.com/xdesk/ximages/470/15540_1000-DEF.pdf
 - *Swan labelling of textiles, skins and leather:* <http://www.svanen.nu/Default.aspx?tabName=CriteriaDetailEng&menuItemID=7056&pgr=39>
 - *Bra Miljöval: Environmental Criteria for Textiles:* <http://www.snf.se/pdf/bmv/bmv-textiles-crit.pdf>
 - *EKU criteria for textiles and leather:* http://www.msr.se/en/green_procurement/criteria/Furnishing-and-textiles
 - *Study on costs/benefits of Green public procurement in Europe, Öko-Institut & ICLEI 2007:* http://ec.europa.eu/environment/gpp/index_en.htm
 - *Accelerating the Development of the Protective Textiles Market in Europe – Report of the Taskforce on Protective Textiles. Composed in preparation of the Communication “A Lead Market Initiative for Europe” {COM(2007) 860 final}:* http://ec.europa.eu/enterprise/leadmarket/doc/prep_tex.pdf & http://ec.europa.eu/enterprise/leadmarket/technical_textiles.htm



10 Annex I – European Ecolabel criteria

CRITERIA

The criteria are divided into three main categories, concerning textile fibres, processes and chemicals, and fitness for use.

TEXTILE FIBRE CRITERIA

Fibre-specific criteria are set in this section for acrylic, cotton and other natural cellulosic seed fibres, elastane, flax and other bast fibres, greasy wool and other keratin fibres, man-made cellulose fibres, polyamide, polyester and polypropylene.

Other fibres for which no fibre specific criteria are set are also allowed, with the exception of mineral fibres, glass fibres, metal fibres, carbon fibres and other inorganic fibres.

The criteria set in this section for a given fibre-type need not be met if that fibre contributes to less than 5 % of the total weight of the textile fibres in the product. Similarly they need not be met if the fibres are of recycled origin. In this context, recycled fibres are defined as fibres originating only from cuttings from textile and clothing manufacturers or from post-consumer waste (textile or otherwise).

Nevertheless, at least 85 % by weight of all fibres in the product must be either in compliance with the corresponding fibre-specific criteria, if any, or of recycled origin.

Assessment and verification: The applicant shall supply detailed information as to the composition of the textile product.

1. Acrylic

(a) The residual acrylonitrile content in raw fibres leaving the fibre production plant shall be less than 1,5 mg/kg.

Assessment and verification: The applicant shall provide a test report, using the following test method: extraction with boiling water and quantification by capillary gas-liquid chromatography.

(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.

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

2. Cotton and other natural cellulosic seed fibres (including kapok)

Cotton and other natural cellulosic seed fibres (hereinafter referred to as cotton) shall not contain more than 0,05 ppm (sensibility 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.



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 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).

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.

Where 100 % of the cotton 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.

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 compounds), or 8270 C (semi-volatile organic compounds).

3. Elastane

(a) Organotin compounds shall not be used.

Assessment and verification: The applicant shall provide a declaration of non-use.

(b) The emissions to air of aromatic diisocyanates during polymerisation and spinning, expressed as an annual average, shall be less than 5 mg/kg of fibre produced.

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

4. Flax and other bast fibres (including hemp, jute, and ramie)

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.

Assessment and verification: If water retting is used, the applicant shall provide a test report, using the following test method: ISO 6060 (COD).

5. Greasy wool and other keratin fibres (including wool from sheep, camel, alpaca, goat)

(a) 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.



(b) The sum total content of the following substances shall not exceed 2 ppm: diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyriphos, fenchlorphos.

(c) The sum total content of the following substances shall not exceed 0,5 ppm: cypermethrin, deltamethrin, fenvalerate, cyhalothrin, flumethrin.

(d) The sum total content of the following substances shall not exceed 2 ppm: diflubenzuron, triflumuron.

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.

(e) For scouring effluent discharged to sewer, 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, expressed as an annual average.

For scouring effluent treated on site and discharged to surface waters, the COD discharged to surface waters shall not exceed 5 g/kg greasy wool. 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.

6. Man-made cellulose fibres (including viscose, lyocell, acetate, cupro, triacetate)

(a) The level of AOX in the fibres shall not exceed 250 ppm.

Assessment and verification: The applicant shall provide a test report, using the following test method: ISO 11480.97 (controlled combustion and microcoulometry).

(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.

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.

7. Polyamide

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.

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

8. Polyester

(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.

Assessment and verification: 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.

(b) The emissions of VOCs during polymerisation of polyester, 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).

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

9. Polypropylene

Lead-based pigments shall not be used.

Assessment and verification: The applicant shall provide a declaration of non-use.

PROCESSES AND CHEMICALS CRITERIA

The criteria in this section apply, where appropriate, to all stages of production of the product, including the production of the fibres. It is nevertheless accepted that recycled fibres may contain some of the dyes or other substances excluded by these criteria, but only if they were applied in the previous life-cycle of the fibres.

10. Auxiliaries and finishing agents for fibres and yarns

(a) Size: At least 95 % (by dry weight) of the component substances of any sizing preparation applied to yarns shall be sufficiently biodegradable or eliminable in wastewater treatment plants, or else shall be recycled.



Assessment and verification: In this context, a substance is considered as ‘sufficiently biodegradable or eliminable’:

- 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,
- 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,
- 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,
- or, for substances for which these test methods are inapplicable, if evidence of an equivalent level of biodegradation or elimination is presented.

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 sizing preparations used.

(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.

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.

Assessment and verification: ‘Sufficiently biodegradable or eliminable’ is as defined above in part (a). 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.

(c) The content of polycyclic aromatic hydrocarbons (PAH) in the mineral oil proportion of a product shall be less than 1,0 % by weight.

Assessment and verification: The applicant shall provide appropriate documentation, safety data sheets, product information sheets or declarations, indicating either the content of polycyclic aromatic hydrocarbons or the non-use of products containing mineral oils.

11. Biocidal or biostatic products

(a) Chlorophenols (their salts and esters), PCB and organotin compounds shall not be used during transportation or storage of products and semi-manufactured products.

Assessment and verification: 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.

(b) Biocidal or biostatic products shall not be applied to products so as to be active during the use phase.

Assessment and verification: The applicant shall provide a declaration of non-use.



12. Stripping or depigmentation

Heavy metal salts (except of iron) or formaldehyde shall not be used for stripping or depigmentation.

Assessment and verification: The applicant shall provide a declaration of non-use.

13. Weighting

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.

14. Auxiliary chemicals

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.

Assessment and verification: The applicant shall provide a declaration of non-use.

15. Detergents, fabric softeners and complexing agents

At each wet-processing site, at least 95 % by weight of the detergents, at least 95 % by weight of fabric softeners and at least 95 % by weight complexing agents used shall be sufficiently degradable or eliminable in wastewater treatment plants.

Assessment and verification: ‘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.

16. Bleaching agents

In general, AOX emissions in the bleaching effluent shall be less than 40 mg Cl/kg. In the following cases, the level shall be less than 100 mg Cl/kg:

- linen and other bast fibres,
- cotton, which has a degree of polymerisation below 1 800, and which is intended for white end products.

This requirement does not apply to the production of man-made cellulose fibres.

The applicant shall either provide a declaration of non-use of chlorinated bleaching agents or provide a test report using the following test method: ISO 9562 or prEN 1485.

17. Impurities in dyes

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.

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.

The applicant shall provide a declaration of compliance.

18. Impurities in pigments

The levels of ionic impurities for pigments used shall not exceed the following: As 50 ppm; Ba 100 ppm, Cd 50 ppm; Cr 100 ppm; Hg 25 ppm; Pb 100 ppm; Se 100 ppm Sb 250 ppm; Zn 1 000 ppm.

The applicant shall provide a declaration of compliance.

19. Chrome mordant dyeing

Chrome mordant dyeing is not allowed.

The applicant shall provide a declaration of non-use.

20. Metal complex dyes.

If metal complex dyes based on copper, chromium or nickel are used:

(a) 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).

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).

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; ISO 9174 or prEN 1233 for Cr.

(b) 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.

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; ISO 9174 or prEN 1233 for Cr.

21. Azo dyes

Azo dyes shall not be used that may cleave to any one of the following aromatic amines:

4-aminodiphenyl (92-67-1)

Benzidine (92-87-5)

4-chloro-o-toluidine (95-69-2)

2-naphthylamine (91-59-8)

o-amino-azotoluene (97-56-3)

2-amino-4-nitrotoluene (99-55-8)



p-chloroaniline (106-47-8)
2,4-diaminoanisole (615-05-4)
4,4'-diaminodiphenylmethane (101-77-9)
3,3'-dichlorobenzidine (91-94-1)
3,3'-dimethoxybenzidine (119-90-4)
3,3'-dimethylbenzidine (119-93-7)
3,3'-dimethyl-4,4'-diaminodiphenylmethane (838-88-0)
p-cresidine (120-71-8)
4,4'-methylene-bis-(2-chloroaniline) (101-14-4)
4,4'-oxydianiline (101-80-4)
4,4'-thiodianiline (139-65-1)
o-toluidine (95-53-4)
2,4-diaminotoluene (95-80-7)
2,4,5-trimethylaniline (137-17-7)
4-aminoazobenzene (60-09-3)
o-anisidine (90-04-0)

Assessment and verification: The applicant shall provide a declaration of non-use of these dyes. Should this declaration be subject to verification the following test method and threshold shall be used: German method B-82.02 or French method XP G 08-014, 30 ppm threshold. (*Note:* false positives may be possible with respect to the presence of 4-aminoazobenzene, and confirmation is therefore recommended).

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

(a) The following dyes shall 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

Assessment and verification: The applicant shall provide a declaration of non-use of such dyes.

(b) 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),

as laid down in Council Directive 67/548/EEC of 27 June 1967 on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances, and its subsequent amendments.

Assessment and verification: The applicant shall provide a declaration of non-use of such dyes.

23. Potentially sensitising dyes

The following dyes shall only be used if the fastness to perspiration (acid and alkaline) of the dyed fibres, yarn or fabric is at least 4:

C.I. Disperse Blue 3 C.I. 61 505

C.I. Disperse Blue 7 C.I. 62 500

C.I. Disperse Blue 26 C.I. 63 305

C.I. Disperse Blue 35

C.I. Disperse Blue 102

C.I. Disperse Blue 106

C.I. Disperse Blue 124

C.I. Disperse Orange 1 C.I. 11 080

C.I. Disperse Orange 3 C.I. 11 005

C.I. Disperse Orange 37

C.I. Disperse Orange 76

(previously designated Orange 37)

C.I. Disperse Red 1 C.I. 11 110

C.I. Disperse Red 11 C.I. 62 015

C.I. Disperse Red 17 C.I. 11 210

C.I. Disperse Yellow 1 C.I. 10 345

C.I. Disperse Yellow 9 C.I. 10 375

C.I. Disperse Yellow 39

C.I. Disperse Yellow 49

Assessment and verification: The applicant shall either provide a declaration of non-use of these dyes or a test report using the following test method for colour fastness: ISO 105-E04 (acid and alkaline, comparison with multi-fibre fabric).

24. Halogenated carriers for polyester

Halogenated carriers shall not be used.

Assessment and verification: The applicant shall provide a declaration of non-use.



25. Printing

(a) Printing pastes used shall not contain more than 5 % volatile organic compounds (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).

Assessment and verification: 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.

(b) Plastisol-based printing is not allowed.

Assessment and verification: 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.

26. Formaldehyde

The amount of free and partly hydrolysable formaldehyde in the final fabric shall not exceed 30 ppm for products that come into direct contact with the skin, and 300 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.

27. Waste water discharges from wet-processing

(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 25 g/kg, expressed as an annual average.

Assessment and verification: The applicant shall provide detailed documentation and test reports, using ISO 6060, showing compliance with this criterion, together with a declaration of compliance.

(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).

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

28. Flame retardants

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 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),



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),
as laid down in Directive 67/548/EEC and its subsequent amendments.

This requirement does not apply to flame retardants that on application change their chemical nature to no longer warrant classification under any of the R-phrases listed above, and where less than 0,1 % of the flame retardant on the treated yarn or fabric remains in the form as before application.

Assessment and verification: The applicant shall either provide a declaration that flame retardants have not been used, or indicate which flame retardants have been used and provide documentation (such as safety data sheets) and/or declarations indicating that those flame retardants comply with this criterion.

29. Shrink resistant finishes

Halogenated shrink-resist substances or preparations shall only be applied to wool slivers.

Assessment and verification: The applicant shall provide a declaration of non-use (unless used for wool slivers).

30. Finishes

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):

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),



as laid down in Directive 67/548/EEC and its subsequent amendments.

Assessment and verification: 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.

31. Fillings

(a) Filling materials consisting of textile fibres shall comply with the textile fibre criteria (Nos 1 — 9) where appropriate.

(b) Filling materials shall comply with criterion 11 on ‘Biocidal or biostatic products’ and the criterion 26 on ‘Formaldehyde’.

(c) 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’.

Assessment and verification: As indicated in the corresponding criteria.

32. Coatings, laminates and membranes

(a) Products made of polyurethane shall comply with criterion 3(a) regarding organic tin and criterion 3(b) regarding the emission to air of aromatic diisocyanates.

Assessment and verification: As indicated in the corresponding criteria.

(b) Products made of polyester shall comply with criterion 8(a) regarding the amount of antimony and criterion 8(b) regarding the emission of VOCs during polymerisation.

Assessment and verification: As indicated in the corresponding criteria.

(c) 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):

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),

as laid down in Directive 67/548/EEC and its subsequent amendments.

Assessment and verification: The applicant shall provide a declaration of non-use of such plasticizers or solvents.



33. Energy and water use

The applicant is requested, on a voluntary basis, to provide detailed information on water and energy use for the manufacturing sites involved in spinning, knitting, weaving and wet processing.

Assessment and verification: The applicant is requested to provide, on a voluntary basis, the abovementioned information.

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.

34. Dimensional changes during washing and drying

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:

- 2 % (warp and weft) for curtains and for furniture fabric that is washable and removable,
- 6 % (warp and weft) for other woven products,
- % (length and width) for other knitted products,
- % (length and width) for terry towelling.

This criterion does not apply to:

- 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.

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 abovementioned limits be exceeded, a copy of the care-label and of the packaging and/or other product information shall be provided.

35. Colour fastness to washing

The colour fastness to washing shall be at least level 3 to 4 for colour change and at least level 3 to 4 for staining.

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.



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).

36. Colour fastness to perspiration (acid, alkaline)

The colour fastness to perspiration (acid and alkaline) shall be at least level 3 to 4 (colour change and staining).

A level of 3 is nevertheless allowed when fabrics are both dark coloured (standard depth > 1/1) and made of regenerated wool or more than 20 % silk.

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.

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).

37. Colour fastness to wet rubbing

The colour fastness to wet rubbing shall be at least level 2 to 3. A level of 2 is nevertheless allowed for indigo dyed denim.

This criterion does not apply to white products or products that are neither dyed nor printed.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.

38. Colour fastness to dry rubbing

The colour fastness to dry rubbing shall be at least level 4.

A level of 3 to 4 is nevertheless allowed for indigo dyed denim.

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.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.

39. Colour fastness to light

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.

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.

This requirement does not apply to mattress ticking, mattress protection or underwear.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 B02.



40. Information appearing on the eco-label

Box 2 of the eco-label shall contain the following text:

- reduced water pollution
- hazardous substances restricted
- whole production chain covered

Assessment and verification: The applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.

11 Annex II – European Ecolabelled suppliers

Source: <http://www.eco-label.com/default.htm>

Product / Service	Manufacturer/Service Provider/Retailer	Origin
100% cotton yarn (Prepatex & Rotofil)	LA PREPARACION TEXTIL SA	Spain
Advanced protectivewear fabrics	Klopman International Srl	Italy
Alabama	BESTE S.P.A	Italy
Alpha	FILATURA ALPAFIL SRL	Italy
America	BESTE S.P.A	Italy
Anchisi	BESTE S.P.A	Italy
Andromeda FU var 213 beige acc	APOLLO S.P.A.	Italy
Andromeda FU var. 78 blu acc	APOLLO S.P.A.	Italy
ANKY underwear	ANKY A/S	Denmark
Anne Linnonmaa ecological fashion	Anne Linnonmaa Oy	Finland
Answer	BESTE S.P.A	Italy
Articoli ricavati da fibre di lana nuova	LANIFICIO VALLOMBROSA SRL	Italy
Articoli ricavati da lana riciclata	LANIFICIO VALLOMBROSA SRL	Italy
Baby shawls	B6 A/S	Denmark
Baby wear and children's wear	JOHA A/S	Denmark
Bed and Table linen, Clothes	HYBLER TEXTIL SRO	Czech Republic
Bedlinen, Terry Towles,Diapers	Krenholm Holding Ltd	Estonia
Benson	BESTE S.P.A	Italy
Beta	FILATURA ALPAFIL SRL	Italy
Casual apparel fabrics	Klopman International Srl	Italy
Children's wear	HELGE RASMUSSEN TRIKOT. A/S	Denmark
Cleo	FAZZINI SPA	Italy
Clothing	AB UTENOS TRIKOTAZAS	Lithuania
Coloured fabrics in 100% silk	Greenville Trading Co. Ltd	Switzerland



Coloured fabrics, textiles & clothing 100% knitted	Thong Thai Textile Co.Ltd	Thailand
Combed Cotton Yarn	THESSALONIKI TEXTILES S.A.	Greece
Company clothing (luxe quality)	KANSAS DANMARK A/S	Denmark
Cotonnerie Biologique	CARPE DIEM TESSILE S.R.L.	Italy
Cotton knit fabric and clothes	NOVOTEX A/S	Denmark
cotton underwear	ERLA TRICOTAGE APS	Denmark
DaniCare	RINETTE A/S	Denmark
Delta	FILATURA ALPAFIL SRL	Italy
Dinner	BESTE S.P.A	Italy
Ecogrip	POINTEX S.P.A	Italy
Ecoimbpl	POINTEX S.P.A	Italy
Ecospu	POINTEX S.P.A	Italy
Engel Workwear	F. ENGEL K/S	Denmark
Event attention catchers	Monkey Print AB	Sweden
Evergreen yarns and fabrics	EVERGREEN FABRIC & GARMENTS	Denmark
Fabric for Italian public sector	NOVA MOSILANA	Czech Republic
Fancy dyed yarn in 100% cotton	RAMA TEXTILE INDUSTRY	Thailand
FE Stancord+ Workwear	F. ENGEL K/S	Denmark
Filato Triblend - Ecocardati di Qualita	LANIFICIO LEMATEX SAS	Italy
Flannel sheets	B6 A/S	Denmark
Frau	BESTE S.P.A	Italy
FU Dynamic capp. Var 200/shodow	APOLLO S.P.A.	Italy
FU Dynamic var. 200/shodow acc.	APOLLO S.P.A.	Italy
Gallop Eco-undergarment	GALLOP S.A.	Greece
Gamma	FILATURA ALPAFIL SRL	Italy
Gonzales	BESTE S.P.A	Italy
Green Cotton Organic bomuld/lycra/viscose	NOVOTEX A/S	Denmark
Green Cotton Sustainable bomuld/lycra/viscose	NOVOTEX A/S	Denmark
GreenOne200	Texdot AB	Sweden
Hacker - furniture fabric 92% wool & 8%polyamide	Kvadrat A/S	Denmark
Hallingdal	Kvadrat A/S	Denmark
Happy	BESTE S.P.A	Italy
High Visibility Workwear - FE	F. ENGEL K/S	Denmark
Hygiene products, bed linen, towels	DIBB AB	Sweden
I Friburgo	INDUSTRIA TESSILE SANESI SPA	Italy
Image workwear fabrics	Klopman International Srl	Italy
Incontinence brief	Tytex A/S	Denmark
Influx Terry Towel	JULES CLARYSSE	Belgium
Ipsilon	FILATURA ALPAFIL SRL	Italy



Jacquard Textiles	ENRIQUE BALLUS SL- ENBASA LAVAL	Spain
Jump	BESTE S.P.A	Italy
Kansas Color	KANSAS DANMARK A/S	Denmark
Kansas Luxe	KANSAS DANMARK A/S	Denmark
Knitted and coloured textiles	J. MORUP STOF APS	Denmark
Knitted cloths	B6 A/S	Denmark
KNITTED FABRIC	J. MORUP STOF APS	Denmark
Knitted fabrics in cotton and cotton/lycra	S. THYGESEN FABRICS	Denmark
Knittwear	AB UTENOS TRIKOTAZAS	Lithuania
Kristian- 100% Baumwollstoff	Hch. Kettelhack GmbH & Co. KG	Germany
Lana	Carbosoltex	Italy
Larice	BESTE S.P.A	Italy
Leinefelder Garne	LEINEFELDER TEXTILWERKE GmbH	Germany
Lenzing Viscose-Modal-Lyocell	LENZING AG	Austria
Linge de lit 100% coton INFLUX	VDS	France
Linge de lit 100% coton TOUT SIMPLEMENT	VDS	France
Linge de lit polyester coton uni, blanc	TISSAGE MOULINE	France
Lux Washable	MANIFATTURE FILATI RIUNITE	Italy
Men s underwear, undyed, knitted and 100% cotton	NIELS MIKKELSENS TRIKOT. A/S	Denmark
Mercerized dyed yarn in 100% cotton	RAMA TEXTILE INDUSTRY	Thailand
Merino wool based fabrics for activewear clothing	iZWool International P/L	Australia
Möbeltyger - Upholstery fabrics	VÄVERIET I UDDEBO	Sweden
Molly - furniture fabrics 100% wool	Kvadrat A/S	Denmark
Musk	FAZZINI SPA	Italy
Name It Newborn	BESTSELLER A/S	Denmark
Name it: Sleeping suits,bodystocking,underwear,hat	BESTSELLER A/S	Denmark
Naturapura Clothing	NATURAPURA Iberica	Portugal
Network - furniture fabric 94% wool & 6% polyamide	Kvadrat A/S	Denmark
Normal dyed yarn in 100% cotton	RAMA TEXTILE INDUSTRY	Thailand
Nybo Working clothes	NYBO JENSEN KONFEKTION A/S	Denmark
Polyamide 6 dyed-textured yarn	ASIA FIBER PUBLIC CO LTD	Thailand
Predator	BESTE S.P.A	Italy
Primiera	BESTE S.P.A	Italy
Primula	BESTE S.P.A	Italy
Pristis	MANIFATTURE FILATI RIUNITE	Italy
Private Labels i bomuld/lycra/viscose	NOVOTEX A/S	Denmark



Proùide	BESTE S.P.A	Italy
River - furniture fabric 85% wool & 15% polyamide	Kvadrat A/S	Denmark
Rota	BESTE S.P.A	Italy
Rotta	BESTE S.P.A	Italy
Run	BESTE S.P.A	Italy
Runner	BESTE S.P.A	Italy
Sardaigne-Sabine	AARON	France
Schwarza Lycocell ®	SeaCell GmbH	Germany
Schwarza Lycocell ® Cross Linked	SeaCell GmbH	Germany
Scoured New Zealand Wool	BLOCH & BEHRENS WOOL (NZ) Ltd	New Zealand
Sea Cell ®	SeaCell GmbH	Germany
Selected Eco Dyed Yarns	SELECTED TEXTILES INDUSTRIES A	Greece
Shalom	MANIFATTURE FILATI RIUNITE	Italy
Speed	BESTE S.P.A	Italy
Table cloth and bed-linen	BEIRHOLM VAEVERIER, AS	Denmark
Table cloths, napkins and bed linen, and fabric	NILE LINEN GROUP	Egypt
Termobond-TD	SOFTEX SRL	Italy
Tessuto Jacquard per Materassi e Guanciali	MANIFATTURA CRESPI	Italy
TEX Product number S494	INNVIK SELLGREN AS	Norway
Textile fabrics	BOGESUNDS VÅVERI AB	Sweden
Textile for the Norwegian national costume	Gudbrandsdalens Uldvarefabrik	Norway
téxtiles de interior	E. CIMA SA	Spain
Trousers-jackets-waiscoats	Power Konfektion A/S	Denmark
Twin - furniture fabric 76% wool & 24% viscose	Kvadrat A/S	Denmark
Twisted dyed yarn in 100% cotton	RAMA TEXTILE INDUSTRY	Thailand
Underwear for healthcare sector	DANICARE A/S	Denmark
Upholstery fabric made of wool	AB LUDVIG SVENSSON	Sweden
Upholstery fabric wool and polyamide	SANDEN PRODUKTION AB	Sweden
Upholstery wool and viscose	Gudbrandsdalens Uldvarefabrik	Norway
Weaved cloths	B6 A/S	Denmark
White Cotton	BERGMAN SWEDEN AB	Sweden
Wood - furniture fabric 85% and 15%	Kvadrat A/S	Denmark
Woolen yarn	Richter Kammgarn GmbH	Germany
Working clothes	KENTAUR A/S	Denmark
Workwear	JYDEN WORKWEAR A/S	Denmark
WorkZone Workwear	F. ENGEL K/S	Denmark
Woven furniture fabrics wool/polyamide	Gabriel A/S	Denmark



Zircone Capp. Var (27/blu rosso e 610/blu - azz)	APOLLO S.P.A.	Italy
Zircone plancia var (27/blu rosso e 610/blu - azz)	APOLLO S.P.A.	Italy
Zircone var (27/blu – rosso e 610 /blu – azz)	APOLLO S.P.A.	Italy