

BLUE ANGEL

The German Ecolabel



Textiles

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Federal Ministry
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The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.



The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labeling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.



The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.



The RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

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This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.

List of abbreviations	
AOX	Adsorbable Organic Halides
BCI	Better Cotton Initiative
BOD	Biological oxygen demand
CFU	Colony forming unit
CLP Regulation	Regulation on classification, labelling and packaging of substances and mixtures: Regulation (EC) No. 1272/2008
CmiA	Cotton made in Africa
CoC	Chain of Custody
COD	Chemical oxygen demand
DIN	Deutsches Institut für Normung e.V.
ECD	Electron capture detector
ECA	European Chemicals Agency
EC	European Community
EMAS	Eco-Management and Audit Scheme
EN	Euronorm
EPA	Environmental Protection Agency (American environmental authority)
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
GC	Gas chromatography
GefStoffV	German Ordinance on Hazardous Substances
GHS	Globally Harmonised System
GMO	Genetically modified organisms
GOTS	Global Organic Textile Standard
GVO	See GMO: Genetically modified organisms
H Phrases	Hazard statement according to the CLP Regulation 1272/2008/EG
IFOAM	International Federation of Organic Agriculture Movements
ILO	International Labour Organisation
ISO	International Organization of Standardization
IVN	Internationale Verband der Naturtextilwirtschaft e. V.
kbA	Controlled biological cultivation
kbT	Controlled biological animal husbandry
MRSL	Manufacturing Restricted Substance List
NOP	National Organic Programme
PAH	Polycyclic aromatic hydrocarbons
PBT substances	Persistent bioaccumulative toxic substances
PEFC	Programme for the Endorsement of Forest Certification Schemes
PFC	Perfluorinated and polyfluorinated chemicals

List of abbreviations	
PTFE	Polytetrafluoroethylene
PUR	Polyurethane
PVC	Polyvinyl chloride
RAL gGmbH	RAL gGmbH – Deutsches Institut für Kennzeichnung und Gütesicherung
DE-UZ	Blue Angel environmental label
REACH	Registration, Evaluation, Authorisation and Restriction of Chemical Substances
SVHC	Substances of very high concern
EMS	Environmental management system
UVCB	Unknown or variable compositions, complex reaction products and biological materials
VOC	Volatile organic compound
vPvB	Very persistent, very bioaccumulative
ZDHC	Zero Discharge of Hazardous Chemicals

1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.

The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

1.2 Background

The textile and fashion sector comprises 1400 companies with a total of around 130,000 employees in Germany. The turnover of the German textile and fashion industry is 31 billion Euro. The production activities cover technical textiles, clothing textiles and house and home textiles (Confederation of the German Textile and Fashion Industry, 2016¹). Turnover in this sector in the EU-28 was 169 billion Euro in 2015. 174,000 European companies employed 1.7 million workers (EURATEX, 2015). Turnover in this sector in the EU-28 was 171 billion Euro in 2016. 177,000 European companies employed 1.7 million workers (EURATEX, 2016).²

Alongside Germany, other important European production locations can be found in Italy, the Netherlands, Poland, Belgium, Romania, France and the Czech Republic. However, most of the textile products sold in Germany are imported goods – mostly from Asian countries. It is these manufacturing countries, in particular, that are often the subject of criticism by civil society actors and the media. Reports on inadequate quality standards in the use of hazardous substances, untenable working conditions or insufficient environmental protection measures mainly focus on the labour-intensive final production (assembly/packaging), but also the finishing and dyeing processes and not least the harvesting of cotton. The textile industry comprises a large number of subsectors that cover the entire production cycle from the production of the raw materials (synthetic fibres and filaments, natural fibres) and semi-finished products (yarn, knitwear incl. associated processes) right through to the final production. For these Basic Award Criteria, the entire production cycle was considered and requirements for environmentally relevant processes were developed.

Alongside natural fibres, the Basic Award Criteria also focus on synthetic fibres due to their importance on the textile market.

The global production of fibres in 2016 can be broken down into 24% cotton, 1% wool and 75% synthetic fibres. Around 2.8 million tonnes of synthetic fibres were produced in Western Europe. 641,000 tonnes of these synthetic fibres were produced in Germany, which accounted for 72% of the total fibres produced. In terms of the synthetic fibres produced in Germany in 2016,

¹ <http://www.textil-mode.de> (As of 26/07/2017)

² <http://euratex.eu> (As of July 2017)

polyester accounted for the largest proportion at 29%, followed by polyacrylic at 27% and polyamide at 10%. 182,000 tonnes of cellulose synthetic fibres were produced, which accounted for 28% of the total production of synthetic fibres (Industrievereinigung Chemiefaser e. V., 2016³).

An improvement in the environmental and health standards in production, sales and the products themselves can only be achieved with the most complete documentation possible of the work processes and transport routes, the consumption of raw materials and energy and the materials used in the production and processing stages. Applicants and suppliers are thus recommended to implement an environmental management system and publicly document it in the form of an environmental or sustainability report.

1.3 Objectives of the environmental label

In order to make consumers clearly aware of the efforts being made in the area of product responsibility, it is necessary to provide transparent and credible product information and product labelling. The objective of the environmental label is thus to highlight those products that meet high environmental standards in their production, avoid the use of chemicals that are damaging to health, deliver good performance characteristics and comply with environmental quality standards as well as the ILO fundamental labour standards during their production. The environmental label will thus offer guidance for the use of sustainable products by:

- Promoting higher environmental standards in the production process;
- Improving occupational safety and social conditions during production;
- Avoiding chemicals hazardous to health in the end product;
- Verifying the product's fitness for use.

Therefore, following benefits for the environment and health are stated in the explanatory box:



1.4 Compliance with legal requirements

The observance of the currently valid versions of relevant existing laws and legal requirements is a prerequisite for those products awarded with the environmental label. In particular, the substance requirements defined by the EU Chemicals Regulation REACH (1907/2006/EC) and the CLP Regulation (Regulation (EC) No. 1272/2008) are taken into account.

1.5 Definitions

- **Bedding** in the sense of these Basic Award Criteria are filled quilts, mattress protectors, mattress covers, toppers, encasements for mattresses, duvets, pillows and sleeping bags.

³ <https://www.ivc-ev.de/> (As of 26/07/2017)

- **Bed linen** describes sheets, covers for pillows and duvets, encasements for bed linen, as well as textiles between bed sheets and mattresses (unfilled mattress protectors).
- **Synthetic fibres and filaments:** Polyacrylic, elastane, elastolefin, polyamide, polyester, polylactide and polypropylene. Filaments are included below in the term "synthetic fibres". Other fibres may be approved after examination by the Federal Environmental Agency.
- **Chlorinated bleaching agents:** Bleaching agents are defined as substances that have the property to reduce the colour of e.g. textiles and thus also remove colouring impurities. The bleaching process is also used as a preparatory step for textile finishing. Bleaching agents with chlorine compounds (e.g. sodium hypochlorite) are used in the chlorine bleach that chemically destroy the pigments by oxidation. Reactive chlorine or chlorine compounds are released during this process.
- **End product:** Products labelled with the Blue Angel ecolabel and offered for sale on the market.
- **Fillings:** Materials for filling and padding: Latex, polyactide, polyurethane, down and feathers.
All approved fibres can also be used as fillings.
- **Mixture⁴:** Mix, mixture or solution composed of two or more substances.
- **House and home textiles:** Goods that are used for interior fittings and interior decoration. This includes blankets & throws, plaids, bed linen, table linen, kitchen linen, bathroom textiles, linen for personal hygiene, curtains, drapes, valances and passements, as well as fabric covers for furniture.
- **Laminate** in the sense of these Basic Award Criteria is a composite of one or more textile layers that is stuck together with a waterproof and at the same time often breathable membrane. Two or multiple layer laminates are found in, amongst other things, functional clothing.
- **Membranes** in the sense of these Basic Award Criteria are waterproof, windproof and at the same time breathable barrier layers based on polyurethane, polyester or polyamide.
- **Mulesing:** The removal of skin around the tail of sheep without any painkillers being administered. The aim of mulesing is to combat infestation with fly maggots.
- **Nanomaterials:** A natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm.⁵
- **Natural fibres:** Cotton, flax, hemp, linen, kapok, wool and silk.
Other fibres may be approved after examination by the Federal Environmental Agency.

⁴ 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, as well as amending Regulation (EC) No. 1907/2006 (CLP Regulation)

⁵ Recommendation of the European Commission from 18 October 2011 for the definition of nanomaterials (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:275:0038:0040:DE:PDF>)

- **Recycled fibres:** Fibres sourced from production and processing waste (pre-consumer waste) (including polymer and fibre production waste, as well as waste cuttings from textile and clothing production) and consumer waste (post-consumer waste) (textiles and all types of fibre and textile products, as well as non-textile waste including PET drinks bottles and fishing nets).
- **Man-made cellulose fibres:** Fibres produced from the raw material cellulose (wood) (lyocell, modal and viscose).
- **Substance⁶:** A chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.
- **Technical or functional textiles:** Textiles that are produced primarily because of their technical and functional properties and not because of their aesthetic and decorative character.
- **Textile accessories:** Goods that do not have a required function but act as an adapted accessory for a main function such as hats, belts, gloves, pockets, visors, pouches, scarves, ribbons, zips, insoles, buttons, labels or textile jewellery.
- **Textile fibres:** Natural fibres, synthetic fibres, man-made cellulose fibres and recycled fibres.
- **Impurity⁷:** An unintended and not deliberately added constituent present in a substance as manufactured. Impurities may originate from the starting materials or be the result of incomplete or secondary reactions during the manufacturing process.
- **VOC:** A "volatile organic compound" describes any organic compound having a vapour pressure of 0.01 kPa or more at 293.15 K, or having a corresponding volatility under the particular conditions of use. In the sense of Directive 2010/75/EU, the fraction of creosote that exceeds this vapour pressure at 293.15 K is considered a volatile organic compound.

2 Scope

The product group "textile products" comprises the following end products, whereby non-textile fillings and membranes are not included in the weight calculations:

- Textile clothing and textile accessories consisting of at least 90% textile fibres by mass;
- Textile products for use inside buildings (house and home textiles) consisting of at least 90% textile fibres by mass;
- Technical textiles consisting of at least 90% textile fibres by mass;
- Bedding consisting of at least 90% textile fibres by mass;
- Cleaning textiles: woven or nonwoven textiles consisting of at least 90% textile fibres by mass that are designed for the wet or dry cleaning of surfaces or for drying household articles;
- Fibres, yarn, fabric, knitted and crocheted items, nonwovens (including textile composites⁸);

⁶ REACH, Article 3, and CLP Regulation, Article 2

⁷ http://www.reach-clp-biozid-helpdesk.de/de/Downloads/Leitfaden-Stoffidentitaet.pdf?_blob=publicationFile&v=2

⁸ Textile composites are textile fabrics (substances) consisting of textile fibres, yarns or both, but not woven or crocheted/knitted. They are produced by sewing over nonwovens or layers of yarn laid lengthways and crossways or strengthening nonwovens using chemical, mechanical or thermoplastic processes

- Fibres made of stainless steel and mineral fibres are limited to a maximum of 10%.

Excluded from the scope of these Basic Award Criteria are:

- End products that are designed to be thrown away after a single use;
- Upholstered furniture, mattresses, textile floor coverings e.g. carpets and textile fabrics made of recycled plastics for façade, advertising and decorative applications⁹;
- Textile footwear with a solid sole¹⁰;
- Materials, accessories and applications made of PVC,
- Materials, components, accessories and applications made of polytetrafluoroethylene (PTFE);
- Textiles made out of asbestos, silver, cupro and cellulose fibres;
- Textile end products with electrical components;
- Products subject to the German Medical Products Law (e.g. bandage dressings);
- Textiles treated with biocidal products;
- Textiles produced from old textiles without breaking down the fibres, i.e. textiles that are put together using existing textiles to make new ones;
- Materials sourced from endangered animal, plant or wood species.

3 Requirements

3.1 General regulations

Only those test reports produced by laboratories accredited according to DIN EN ISO/IEC 17025 "general requirements for the competence of testing and calibration laboratories" will be accepted. Verifications in the form of test reports for other certificates such as the EU-Ecolabel, OEKO-TEX Association, GOTS, Austrian Environmental Label, IVN Best, bluesign system and Cradle to Cradle, insofar as they comply with the following limit values, will also be accepted. Certificates for a label e.g. about compliance with OEKO-TEX Standard 100 can also be accepted. Appendix A provides more details on this area. Appendix A can be expanded in consultation with the Federal Environmental Agency.

The required test reports for the process-related verifications in the relevant sections must not be more than two years old at the time of application.

etc. Felts are also considered to be textile composites. Textile composites are used to produce lining materials, decorative materials, cleaning cloths etc. and also many technical articles.

⁹ Environmental labels already exist for these products: DE-UZ 117 for upholstered furniture, DE-UZ 119 for mattresses, DE-UZ 128 for textile floor coverings and DE-UZ 193 for textile fabrics made from recycled plastics.

¹⁰ The environmental label DE-UZ 155 for footwear already exists here.

The required test reports for the ingredients in the materials added to the products and for the product's fitness for use must not be more than one year old at the time of application. For all of the named standards, legal regulations and certification schemes, the rules and regulations in place at the time of application are valid, unless specifically stated otherwise. When examining the applications and monitoring compliance with the criteria, recognised environmental management systems such as EMAS or ISO 14001 can be taken into account. A list of the named legal regulations and testing standards can be found in Appendix B.

3.2 Requirements for textile fibres

The requirements in 3.2.1 and 3.2.2 for the origin and production process of the textile fibres are valid for all textile fibres that comprise $\geq 5\%$ by mass of all the textile fibres in the end product.

3.2.1 Requirements for the origin of natural fibres, cellulose and other plant-based raw materials

Textile natural fibres (cotton, kapok, linen, hemp, flax, wool) and other plant-based raw materials (for the production of polylactide) must be sourced from controlled organic cultivation or controlled biological animal husbandry or from fibres from the conversion phase¹¹ and comply with the requirements of Regulation (EC) No 834/2007 (EC Organic Regulation) or the American National Organic Programme (NOP).

Cellulose for man-made cellulose fibres and plant-based raw materials for the production of latex must be sourced from wood that has been cultivated in accordance with the principles of sustainable forestry management as defined by the FAO.

At all stages of the processing chain, it must be ensured that controlled biological fibres and products are not mixed with conventional fibres and products and that the controlled biological fibres are not contaminated due to contact with prohibited substances.

The fibres used in the products must not be sourced from genetically modified organisms (GMO). Mulesing is not permitted.

In the case of fine fabrics (fineness range $> \text{NM}100$), where the required fibre lengths cannot currently be sourced from the controlled organic cultivation of cotton, the Federal Environmental Agency can conduct an inspection after the improved cultivation of the cotton that follows a similar process to standards such as e.g. CmiA, BCI and Fairtrade.

¹¹ "Conversion": Transition from non-organic to organic farming within a given period of time, during which the provisions concerning organic production have been applied. (EC ECO Regulation (EC) No 834/2007 of the council of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 (EWG), No 2092/91, Official Journal of the European Union L 189 of 20.07.2007, p. 1)

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1. Fibres labelled with the German organic logo (Bio-Siegel) or the EU organic logo ("Euro leaf") or in accordance with the American National Organic Programme (NOP) will be accepted. In addition, corresponding certificates from an internationally recognised certification body accredited by the IFOAM or in accordance with DIN EN ISO/IEC 17065 that verify compliance with recognised international or national ecological farming standards can be submitted. In the case of cellulose fibres used in the product, the applicant shall submit certificates verifying compliance with this criteria. For this purpose, the applicant shall obtain valid independently issued certificates about the product chain from the fibre producers verifying that the wood used for the wood fibres was cultivated in accordance with the principles of sustainable forestry management. FSC, PEFC or equivalent rules will be accepted as independent certification.

The certification of products "in conversion" is only possible if the regulations on which the certification of the fibre production is based include the possibility of such certification for the fibres in question. However, they must be specially labelled in accordance with these regulations.

If requested to do so by RAL GmbH, the applicant shall submit, where relevant, a shipping or transaction certificate¹² from an accredited certification body verifying compliance with the requirement at all stages of the processing chain, as well as information on the amount of biofibres produced and about the certification body and certification standard.

3.2.2 Requirements for the production process for fibres

3.2.2.1 Requirement for recycled fibres

Recycled fibres from polyamide and polyester must comply with the requirements listed for these types of fibres. Other recycled fibres must comply with the requirements listed here in Paragraph 3.2.2.

Compliance verification

The recycled content must be traceable back to the conditioning of the source material. This shall be verified through independent certification of the product chain or using documentation provided by the suppliers of the source materials and the recycling companies.

3.2.2.2 Production of flax and other bast fibres

Flax and other bast fibres may only be produced with the aid of water retting if the water used for the water retting has been treated so as to reduce the chemical oxygen demand (COD) or the total organic carbon by at least 75% for hemp fibres and by at least 95% for flax and other bast fibres.

¹² This is a certificate that confirms that the traded product (e.g. raw cotton or yarn) was produced in accordance with the relevant standard.

Compliance verification

If water retting is used, the applicant shall declare their compliance with the requirement according to 3.2.2.2 in Annex 1 and submit confirmation from the operator of the plant. The operator shall enclose a test report to verify compliance with the requirement. The test of the COD will be carried out in accordance with ISO 6060 or DIN 38409-41 or DIN 38409-44 or DIN-ISO 15705 on the basis of a qualified random sample or a 2-hour mixed sample.

If discharged to an urban waste water treatment plant (indirect discharge), the applicant shall also enclose a notice of approval verifying that the discharge process has been approved and that the urban waste water treatment plant meets the requirements of Directive 91/271/EEC.

3.2.2.3 Wool and other keratin fibres

3.2.2.3.1 Requirements for waste water from wool scouring before mixing (indirect discharge)

The chemical oxygen demand (COD) of the cleaning water discharged into the sewerage system must not exceed 45 g/kg of greasy wool before mixing with other waste water.

3.2.2.3.2 Requirements for waste water from wool scouring at the discharge point (direct discharge)

The chemical oxygen demand (COD) of the cleaning water treated on-site and discharged to surface waters must not exceed 150 mg/l (qualified random sample) or 1.5 mg/l (2-hour mixed sample) of greasy wool. The pH value of the waste water discharged to surface waters must be between 6 and 9 (unless the pH value of the receiving waters is outside this range) and the temperature must be below 35 °C (unless the temperature of the receiving waters is already above this limit).

Compliance verification

The applicant shall declare compliance with the requirement in accordance with 3.2.2.3.1 or 3.2.2.3.2 in Annex 1 and submit confirmation from the operator of the wool scouring plant. The operator of the wool scouring plant shall also provide information on how he/she treats the cleaning water (on-site treatment + direct discharge or on-site treatment + indirect discharge). The applicant shall enclose a test report to verify compliance with the requirements. The test of the COD will be carried out in accordance with ISO 6060 or DIN 38409-41 or DIN 38409-44 or DIN-ISO 15705 on the basis of a qualified random sample or a 2-hour mixed sample.

If discharged to an urban waste water treatment plant, the applicant shall also enclose a notice of approval verifying that the discharge process has been approved and that the urban waste water treatment plant meets at least the requirements of Directive (EEC) 91/271.

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

3.2.2.4.1 Halogen content

The halogen content of the fibres must not exceed 150 mg/kg.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmation from the operator of the plant (fibre producer), as well as a test report. The test shall be carried out in accordance with ISO 11480 (controlled combustion and microcoulometry).

3.2.2.4.2 Emissions to air

In the case of viscose and modal fibres, the sulphur content of the emissions of sulphur compounds to air from fibre production processes, expressed as an annual average, must not exceed 30 g/kg of staple fibres produced, 40 g/kg of filament fibres for batch washing and 170 g/kg of filament fibres for integrated washing. If both types of fibres are produced at a particular site, the total emissions must not exceed the corresponding weighted average value.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmation from the plant operator (viscose producer), as well as a sulphur emissions report¹³.

3.2.2.4.3 Emissions to water in the production of viscose fibres

The waste water from the production of viscose fibres must not exceed the following values (expressed as annual averages) when discharged to surface waters:

- 0.3 g zinc /kg filament fibres produced,
- 0.16 g zinc /kg staple fibres produced,
- 0.04 g AOX /kg viscose fibres produced,
- 20 g COD /kg viscose fibres produced,
- 0.3 mg sulphide/l.

This requirement does not apply for approved discharge into an urban waste water treatment plant that meets at least the requirements of the Council Directive of 21 May 1991 concerning urban waste water treatment (91/271/EEC).

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 and submit a declaration of compliance from the operator of the plant (viscose producer), as well as a test report. The following methods may be used for completing these tests:

- Zinc: EN ISO 11885,
- AOX value: EN ISO 9562,
- COD: ISO 6060 or DIN ISO 15705 or DIN 38409-41, or DIN 38409-44,
- Sulphide: DIN 38405-27 or ISO 10530.

The discharge of pollutants is determined from the concentration values and the corresponding waste water flow volumes related to the samples.

¹³ Note: Using a sulphur emissions report on the carbon disulphide added and reused, it is possible to calculate what amount is actually emitted.

If discharged to an urban waste water treatment plant (indirect discharge), the applicant shall also enclose a notice of approval for the fibre producer verifying that the discharge process has been approved and that the urban waste water treatment plant meets at least the requirements of Directive 91/271/EEC.

3.2.2.5 Polyester fibres

Textile end products made out of polyester must comply with subcriterion a) as well as either of b) or c).

- a) The amount of antimony present in the polyester fibres must not exceed 260 ppm or an elutable amount of 30 mg/kg.

Compliance verification

The applicant shall declare in Annex 1 that he/she uses antimony-free polyester fibres and submit a corresponding declaration for his/her supplier or if fibres containing antimony have been used, the applicant shall submit a test report from the suppliers of the fibres to verify compliance with this requirement. The test shall be carried out using the following method: direct determination by atomic absorption spectrometry. The test shall be carried out on the raw fibre prior to any wet processing. Leaching according to DIN EN ISO 105-E04 / ISO 17294-2 (ICP/MS).

- b) Fibres must be produced using a minimum content of PET that has been recycled from production and/or consumer waste. Staple fibres must contain a minimum of 50% recycled fibres and filament fibres must contain at least 20% recycled fibres. This requirement does not apply to microfibres, which must comply with subcriterion c).
- c) The emissions of volatile organic compounds (VOC) in the sense of the Industrial Emissions Directive (2010/75/EU) during polymerisation and the production of polyester fibres, measured at the process steps where they occur, expressed as an annual average, must not exceed 1.2 g/kg for PET chips, 10.3 g/kg for filament fibres or 0.2 g/kg for produced polyester resin.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a declaration of conformity from the suppliers of the fibres, as well as a test report in accordance with DIN EN 12619 that verifies compliance with this requirement.

3.2.2.6 Polyamide fibres

Textile end products made out of polyamide must comply with at least one of the product standards stated in subcriteria a) and b).

- a) Fibres must be manufactured using a minimum content of 20% nylon that has been recycled from production and/or consumer waste.
- b) The N₂O emissions to air during the monomer production, expressed as an annual average, must not exceed 9 g/kg of polyamide 6 fibre produced or 9 g/kg of polyamide 6.6 fibre produced. In addition, reduction technologies must be used in the production of caprolactam

and adipic acid. It must be ensured that the degree of reduction in the N₂O emissions during adipic acid production is at least 95%.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a declaration of conformity from the monomer producer, as well as test reports for the raw and clean gas verifying that a reduction of at least 95% has been achieved.

3.2.2.7 Polyacrylic fibres

3.2.2.7.1 Acrylonitrile

The residual acrylonitrile content in raw fibres leaving the fibre production plant must be less than 1.5 mg/kg.

Compliance verification

The applicant shall declare in Annex 1 that he/she complies with the requirement above and submit confirmation from the suppliers of the fibres, as well as a test report from the suppliers of the fibres verifying compliance with this requirement. The test shall be carried out in accordance with the following method: Extraction with boiling water and quantification by capillary gas-liquid chromatography.

3.2.2.7.2 Acrylonitrile emissions

The emissions to air of acrylonitrile (during polymerisation and up to the solution ready for spinning), expressed as an annual average, must be less than 1 g/kg of fibre produced.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmation from the suppliers of the fibres and a test report in accordance with VDI Guideline 3863, sheets 1 and 2 verifying compliance with this requirement.

3.2.2.8 Elastane fibres

3.2.2.8.1 Organotin compounds

The use of organotin compounds is not permitted.

Compliance verification

The applicant shall declare in Annex 1 that such compounds are not used and submit confirmation from the suppliers of the fibres.

3.2.2.8.2 Aromatic diisocyanates

The concentration of aromatic diisocyanates from the polymerisation and the spinning processes must not exceed a value of 0.05 mg/m³ (corresponds to 0.005 ml/m³) at the workplaces in which the relevant process steps occur, expressed as an 8 hour average (shift average).

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmation from the suppliers of the fibres to verify compliance with this requirement. Suitable test methods using HPLC from recognised testing laboratories will be accepted.

3.2.2.9 Polypropylene fibres

It is not permitted to use lead-based pigments.

Compliance verification

The applicant shall declare in Annex 1 that such compounds are not used and submit confirmation from the suppliers of the fibres.

3.2.2.10 Elastolefin

The spinning oils used in the production of elastolefin may not contain the following substances:

- Octamethylcyclotetrasiloxane D4 CAS 556-67-2,
- Decamethylcyclopentasiloxane D5 CAS 541-02-6,
- Dodecamethylcyclohexasiloxane D6 CAS540-97-6

Compliance verification

The manufacturer declares in Appendix 1 that there are no impurities of these substances above a limit of 0.10% in the spinning oil and submits a confirmation from the fiber supplier and submits the current safety data sheets of the spinning oil.

3.2.3 Requirements for the biodegradability of auxiliaries and finishing agents for fibres and yarns

3.2.3.1 Sizing

At least 95% (dry weight) of the components of any sizing preparation applied to yarns must be sufficiently biodegradable or recycled. The sum of the individual components must be taken into account.

3.2.3.2 Spinning solution additives

Spinning solution additives, spinning auxiliaries and preparation agents for primary spinning (including carding oils, spin finishes and lubricants): At least 90% (dry weight) of the components must be sufficiently biodegradable or eliminable in waste water treatment plants.

Compliance verification

Substance group	Scope of restriction	Limit values	Compliance verification
<p>i) Sizing preparations applied to fibres and yarns</p> <p>Applicability: Spinning processes</p>	<p>At least 95% (by dry weight) of the components must be readily biodegradable.</p> <p>In all cases, the sum of the individual components must be taken into account.</p>	<p>Readily biodegradable:</p> <p>70% degradation of dissolved organic carbon within 28 days</p> <p>or</p> <p>60% of theoretical maximum oxygen depletion or carbon dioxide generation within 28 days</p>	<p>Declaration from the chemical supplier supported by OECD or ISO test results</p> <p>Test methods:</p> <p>OECD 301 A, ISO 7827 OECD 301 B, ISO 9439 OECD 301 C, OECD 301 D, OECD 301 E, OECD 301 F, ISO 9408 OECD 310, ISO 14593 ISO 10708</p>
<p>i) Spinning solution additives, spinning additives and preparation agents (including carding oils, spin finishes and lubricants)</p> <p>Applicability: Primary spinning processes</p>	<p>At least 90% (by dry weight) of the components must be readily biodegradable, inherently biodegradable or eliminable in waste water treatment plants.</p> <p>In all cases, the sum of the individual components must be taken into account.</p>	<p>Readily biodegradable:</p> <p>See definition under i)</p> <p>Inherently biodegradable:</p> <p>80% degradation of dissolved organic carbon within 7 days (possibly 28 days).</p> <p>Eliminability in laboratory clarification units: 80% degradation of dissolved organic carbon (plateau phase)</p>	<p>Declaration from the chemical supplier supported by OECD or ISO test results</p> <p>Test methods:</p> <p>See compliance verifications under i) readily biodegradable tests.</p> <p>Inherently biodegradable tests that are accepted:</p> <p>OECD 302 B, ISO 9888 OECD 302 C</p> <p>Tests for eliminability in laboratory clarification units:</p> <p>OECD 303A/B, ISO 11733</p>

This degree of biodegradation must be achieved within 10 days of the beginning of the degradation phase starting with the day when 10% of the substance has been degraded, unless the

substance has been identified as a UVCB (unknown or variable compositions, complex reaction products or biological materials) or as a complex multi-constituent substance with structurally similar constituents. In this case, and when there is sufficient reason, the 10-day window shall not be applied and the 28-day result shall be applicable instead.

The applicant shall submit a list of all spinning solution additives, spinning auxiliaries and preparation agents for primary spinning (including carding oils, spin finishes and lubricants) and their manufacturers. In addition, the applicant shall submit declarations from the chemical suppliers and the corresponding test reports, or safety data sheets, indicating the tests used to investigate the substances and their results.

The corresponding ISO standards and REACH methods¹⁴ will be recognized as equivalent.

3.3 Requirements for the production process for laminates and membranes

In the case of textile end products that contain laminates, the laminates added to the products must comply with the following requirements:

a) **Textiles used**

For the fibres of the textiles used, the requirements stated in the relevant sections are valid.

b) **Membranes used**

For membranes produced on the basis of polyester, polyurethane, and polyamide, they must comply with at least one of the two subcriteria i) and ii).

i) The membranes must be produced using at least 30% recycled materials from production and/or consumer waste.

ii) The membranes must not be produced using organic solvents.

The requirement for the amount of antimony in polyester fibres also needs to be taken into account in the case of polyester membranes. The N₂O requirement for polyamide fibres needs to be taken into account for polyamide membranes, while the limit values for polyurethane need to be taken into account for polyurethane membranes. Components produced from polyurethane must also comply with the textile fibre requirement 3.2.2.6.1 for organotin compounds and requirement 3.2.2.6.1 for workplace exposure to aromatic diisocyanates.

c) **Adhesives used**

Solvent-based adhesives must not be used in the laminating process. Only thermoplastic or reactive (e.g. moisture curing) hotmelt adhesives may be used. If reactive polyurethane-based hotmelt adhesives are used, the concentration of aromatic diisocyanates must not exceed a value of 0.05 mg/m³ (corresponds to 0.005 ml/m³) measured at the workplaces, expressed as an 8 hour average (shift average).

d) **Functional products**

The exclusion criteria in Paragraph 3.6.2.4 apply to the functional products used on the textiles.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit declarations of conformity from the membrane suppliers/adhesive suppliers or the laminate manufacturers.

¹⁴ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:142:0001:0739:DE:PDF>
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:220:0001:0094:de:PDF>

3.4 Requirements for down and feathers from water fowl (geese and ducks)

The extraction of feathers from living animals, live plucking and plucking during molting, as well as the extraction of feathers and down from animals that are held for the production of foie gras, is not permitted.

Compliance verification

Verification of the traceability of the goods/filling, as well as verification that no feathers are extracted from living animals, must be provided in audit reports or certificates from qualified and accredited testing institutions, for example according to the Responsible Down Standard, Traceable Down Standard or the DOWNPASS standard.

3.4.1 Requirements for waste water at the discharge point (direct discharge) in the processing of down and feathers

Waste water from the wet processing must not exceed the following values when discharged to surface water:

- COD: 160 mg/l (expressed as an average yearly value)
- BSB5: 30 mg/l
- TSS: 30 mg/l
- Ammonium nitrogen: 10 mg/l
- Total nitrogen: 20 mg/l
- Phosphorous, total 2 mg/l
- Copper: 1 mg/l
- Nickel: 0.5 mg/l
- Total chromium: 0.5 mg/l
- Chromium (VI): 0.1 mg/l
- Tin: 2 mg/l
- Zinc: 2 mg/l
- Persistent foam at the discharge point
- The pH value of the waste water discharged to surface waters must be between 6 and 9 (unless the pH value of the receiving waters is outside this range) and the temperature must be below 35 °C (unless the temperature of the receiving waters is already above this limit).

This requirement shall not apply if it can be proven that the discharge into the urban waste water treatment plant has been approved and the urban waste water treatment plant meets at least the requirements of the Council Directive of 21 May 1991 concerning urban waste water treatment (91/271/EEC).

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a declaration of conformity from the operator of the textile finishing plant and test reports verifying compliance with the requirements in accordance with Annex 38 of the German Waste Water Ordinance or equivalent international test reports. The following test methods can be used here (on the basis of a qualified random sample or a 2-hour mixed sample):

- COD: ISO 6060 or DIN 38409-41 or DIN 38409-44 or DIN ISO 15705
- Copper and nickel: ISO 8288,
- Chromium: ISO 9174 or DIN EN 1233,
- Ammonium nitrogen: DIN EN ISO 11732,

- Total nitrogen: DIN EN ISO 12260,
- Total phosphorous: DIN EN ISO 11885,
- Tin: DIN EN ISO 11885,
- Zinc: DIN EN ISO 11885.

The waste water treatment plant must be regularly monitored. In addition, the applicant shall submit a declaration from the operator of the textile finishing plant about the frequency of the measurements of the discharge values (at least every six months).

If discharged to an urban waste water treatment plant, the applicant shall also enclose a notice of approval for the textile finishing plant verifying that the discharge process has been approved and that the urban waste water treatment plant meets at least the requirements of Directive 91/271/EEC.

3.4.2 Hygiene requirements

Table 1: Requirements for down and feathers

Description	Requirement EN 12935	Test methods
Oxygen index	max. 20 Target: less than 10	EN 1162
Microbiological state	Less than 10 ⁶ CFU/g	EN 1884
Mesophil aerobic bacteria count		
Faecal streptococci count	Less than 10 ² CFU/g	
Sulphite reducing clostridium count	Less than 10 ² CFU/g	
Presence of salmonella	Not present in 20 g	
Oil and grease content	0.5 to 2 %	EN 1163
Turbidity	min. 300 mm	EN 1164
pH value	6.6 to 8	ISO 3071

Compliance verification

Test reports according to the above-mentioned standards.

3.5 Requirements for fillings

Fillings added to the product must comply with the requirements in Paragraph 3.6.1 "General exclusion of substances with certain properties". Special requirements are formulated as follows:

3.5.1 Latex

- The concentrations of the substances listed below in latex foam must not exceed the limits in Table 2:

Table 1: Restricted substances in latex foams that are used in fillings

Substance group	Substance	Limit value (ppm)	Evaluation and test conditions
Chlorophenols	Mono and di-chlorinated phenols (Salts and esters)	1	A
	Other chlorophenols	0.1	A
Heavy metals	As (Arsenic)	0.5	B
	Cd (Cadmium)	0.1	B
	Co (Cobalt)	0.5	B
	Cr (Chromium), total	1	B
	Cu (Copper)	2	B
	Hg (Mercury)	0.02	B
	Ni (Nickel)	1	B
	Pb (Lead)	0.5	B
	Sb (Antimony)	0.5	B
Pesticides (only for foam composed of at least 20% natural latex by mass)	Aldrin	0.04	C
	o,p'-DDE	0.04	C
	p,p'-DDE	0.04	C
	o,p'-DDD	0.04	C
	p,p'-DDD	0.04	C
	o,p'-DDT	0.04	C
	p,p'-DDT	0.04	C
	Diazinone	0.04	C
	Dichlorfenthion	0.04	C
	Dichlorvos	0.04	C
	Dieldrin	0.04	C
	Endrin	0.04	C
	Heptachlor	0.04	C
	Heptachlorepoxyde	0.04	C
	Hexachlorobenzene	0.04	C
	Hexachlorocyclohexane	0.04	C
	α-Hexachlorocyclohexane	0.04	C
	β-Hexachlorocyclohexane	0.04	C
	γ-Hexachlorocyclohexane (Lindane)	0.04	C
	δ-Hexachlorocyclohexane	0.04	C
Malathion	0.04	C	
Methoxychlor	0.04	C	

Substance group	Substance	Limit value (ppm)	Evaluation and test conditions
	Mirex	0.04	C
	Parathion-ethyl	0.04	C
	Parathion-methyl	0.04	C
Other specific substances that are restricted	Butadiene	1	D

Compliance verification

For requirement a), the applicant shall submit a declaration of compliance and, where relevant, test reports in accordance with the following test methods:

- A. *The applicant shall submit a report for chlorophenols that presents the results of the following test method: A 5 g sample is milled and the chlorophenols are extracted in the form of phenol (PCP), sodium salt (SPP) or esters. The extracts are analysed by means of gas chromatography (GC). Detection is carried out using a mass spectrometer or electron capture detector (ECD).*
- B. *The applicant shall submit a report for heavy metals that presents the results of the following test method: Milled sample material is eluted in accordance with DIN 12457 or an equivalent standard in a ratio of 1:10. The resultant eluate is passed through a 0.45 µm membrane filter (if necessary by pressure filtration). The solution obtained is examined for the content of heavy metals by inductively coupled plasma optical emission spectrometry (ICP-OES), also known as inductively coupled plasma atomic emission spectrometry (ICP-AES), or by atomic absorption spectrometry using a hydride or cold vapour process.*
- C. *The applicant shall submit a report for pesticides that presents the results of the following test method: A 2 g sample is extracted in an ultrasonic bath with a hexane/dichloromethane mixture (85/15). The extract is cleaned up by acetonitrile agitation or by adsorption chromatography over florisil. Measurement and quantification are carried out using gas chromatography with detection on an electron capture detector or by coupled gas chromatography/mass spectrometry. The testing of pesticides is required for latex foams with a content of at least 20% natural latex.*
- D. *The applicant shall submit a report for butadiene that presents the results of the following test method: Following milling and weighing of the latex foam, headspace sampling is performed. The butadiene content is determined using gas chromatography with detection by flame ionisation.*

b) VOC emissions after 24 hours

The test chamber concentrations for the following volatile organic compounds (VOC) after 24 hours must not exceed the limit values in Table 3.

Table 3: VOC emission limit values for latex foam

Substance	Limit value (mg/m ³)
1,1,1-trichloroethane	0.2
4-phenylcyclohexene	0.02
Carbon disulphide	0.02
Formaldehyde	0.005
Nitrosamines (*)	0.0005
Styrene	0.005
Tetrachloroethylene	0.15
Toluene	0.1
Trichlorethylene	0.05
Vinyl chloride	0.0001
Vinyl cyclohexene	0.002
Aromatic hydrocarbons (total)	0.3
VOC (total)	0.5

(*) N-nitrosodimethylamine (NDMA), N-nitrosodiethylamine (NDEA), N-nitrosomethylethylamine (NMEA), N-nitrosodi-i-propylamine (NDiPA), N-Nitrosodi-n-propylamine (NDPA), N-Nitrosodi-n-butylamine (NDBA), N-nitrosopyrrolidinone (NPYR), N-nitrosopiperidine (NPIP), N-nitrosomorpholine (NMOR).

Compliance verification

The applicant shall submit a declaration of conformity with requirement b), accompanied by a test report, where relevant, that presents the results of a test chamber analysis in accordance with ISO 16000-9. The wrapped sample must be stored at room temperature for at least 24 hours. After this period, the sample is unwrapped and immediately transferred to the test chamber. The sample is placed on a sample holder, which allows air access from all sides. The climatic factors are adjusted in accordance with ISO 16000-9. In order to receive comparable test results, the area specific ventilation rate ($q=n/l$) must be 1. The ventilation rate must be between 0.5 and 1. The air sampling is carried out 24 ± 1 h after loading of the chamber for a duration of 1 hour using DNPH cartridges for the analysis of formaldehyde and other aldehydes and using Tenax TA tubes for the analysis of other volatile organic compounds. Sampling for other compounds may take longer but must be completed within 30 hours.

The analysis of formaldehyde and other aldehydes must comply with the standard ISO 16000-3. Unless specified differently, the analysis of other volatile organic compounds must comply with the standard ISO 16000-6. Testing in accordance with the standard CEN/TS 16516 will be considered as equivalent to the ISO 16000 series of standards.

The analysis of nitrosamines is carried out using gas chromatography in combination with a thermal energy analysis detector (GC-TEA), in accordance with the DGUV 213-523 testing method or an equivalent.

3.5.2 Polyurethane (PUR)

a) Hazardous substances and mixtures

The concentrations of the substances and mixtures listed below in PUR foam must not exceed the limit values in Table 4:

Table 4: List of restricted substances and mixtures in PUR

Substance group	Substance (acronym, CAS number, element symbol)	Limit value	Test method
Biocidal products		Not intentionally added	A
Flame retardants		Not added	A
Metals and metal compounds	As (Arsenic)	0.2 ppm	B
	Cd (Cadmium)	0.1 ppm	B
	Co (Cobalt)	0.5 ppm	B
	Cr (Chromium), total	1.0 ppm	B
	Cr(VI) (Chromium(VI))	0.01 ppm	B
	Cu (Copper)	2.0 ppm	B
	Hg (Mercury)	0.02 ppm	B
	Ni (Nickel)	1.0 ppm	B
	Pb (Lead)	0.2 ppm	B
	Sb (Antimony)	0.5 ppm	B
	Se (Selenium)	0.5 ppm	B
Plasticizers	Dibutylphthalate (DBP, 84-74-2) (*)	0.01% by mass (total sum of all 6 phthalates in furniture for children under 3 years)	C
	Di-n-octylphthalate (DNOP, 117-84-0) (*)		
	Di(2ethylhexyl)phthalate (DEHP, 117-81-7) (*)		
	Benzylbutylphthalate (BBP, 85-68-7) (*)		
	Diisodecylphthalate (DIDP, 26761-40-0)		
	Diisononylphthalate (DINP, 28553-12-0)		
	Phthalates listed on the ECHA candidate list (**)	Not intentionally added	A
TDA and MDA	2,4-toluoldiamine (2,4-TDA, 95-80-7)	5.0 ppm	D

Substance group	Substance (acronym, CAS number, element symbol)	Limit value	Test method
	4,4' Diaminodiphenylmethane (4,4'-MDA, 101-77-9)	5.0 ppm	D
Organotin compounds	Tributyltin (TBT)	50 ppb	E
	Dibutyltin (DBT)	100 ppb	E
	Monobutyltin (MBT)	100 ppb	E
	Tetrabutyltin (TeBT)	—	—
	Monooctyltin (MOT)	—	—
	Diocetyl tin (DOT)	—	—
	Tricyclohexyltin (TcyT)	—	—
	Triphenyltin (TPHT)	—	—
	Total amount	500 ppb	E
	Chlorinated or brominated dioxins or furans	Not intentionally added	A
	Chlorinated hydrocarbons: (1,1,2,2-Tetrachloroethane, Pentachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethylene)	Not intentionally added	A
	Chlorinated phenols (PCP, TeCP, 87-86-5)	Not intentionally added	A
	Hexachlorocyclohexane (58-89-9)	Not intentionally added	A
	Monomethyldibromo-diphenylmethane (99688-47-8)	Not intentionally added	A
	Monomethyldichloro-diphenylmethane (81161-70-8)	Not intentionally added	A
	Nitrites	Not intentionally added	A
	Polybrominated biphenyls (PBB, 59536-65-1)	Not intentionally added	A
	Pentabromodiphenyl ether (PeBDE, 32534-81-9)	Not intentionally added	A
	Octabromodiphenyl ether (OctaBDE, 32536-52-0)	Not intentionally added	A
	Polychlorinated biphenyls (PBB, 1336-36-3)	Not intentionally added	A
Polychlorinated terphenyls (PCT, 61788-33-8)	Not intentionally added	A	

Substance group	Substance (acronym, CAS number, element symbol)	Limit value	Test method
	Tris(2,3-dibromopropyl) phosphate (TRIS, 126-72-7)	Not intentionally added	A
	Trimethylphosphate (512-56-1)	Not intentionally added	A
	Tris-(aziridinyl)-phosphin oxide (TEPA, 545-55-1)	Not intentionally added	A
	Tris(2-chloroethyl)-phosphate (TCEP, 115-96-8)	Not intentionally added	A
	Dimethyl methylphosphonate (DMMP, 756-79-6)	Not intentionally added	A
(*) 0.01% by mass (total sum of 4 phthalates in all other furniture products). (**) Refers to the current version of the ECHA list of substances of very high concern at the time of application.			

Compliance verification

The applicant shall submit a declaration of compliance with requirement (a). If tests are required, the applicant shall submit the test results verifying compliance with the limit values stated in Table 4. If an analysis is prescribed for test methods B, C, D and E, six samples taken at a maximum depth of 2 cm under the surface shall be sent to the responsible laboratory.

- A. In the case of biocidal products, phthalates and other specific substances that are restricted, the applicant shall submit a declaration together with declarations from the suppliers verifying that these substances have not been intentionally added to the formulation.
- B. The applicant shall submit a report for heavy metals that presents the results of the following test method: Milled sample material is eluted in accordance with DIN EN 12457-4 or an equivalent standard in a ratio of 1:10. The resultant eluate is passed through a 0.45 µm membrane filter (if necessary by pressure filtration). The solution obtained is examined for the content of heavy metals by atomic emission spectrometry with inductively coupled plasma (ICP-AES or ICP-OES) or by atomic absorption spectrometry using a hydride or cold vapour process.
- C. The applicant shall submit a report for the total amount of plasticizers that presents the results of the following test method: Extraction is carried out using a validated method such as the subsonic extraction of a 0.3 g sample in a vial with 9 ml of *t*-Butylmethylether for a duration of 1 hour. This is followed by the determination of phthalates using gas chromatography with a single ion monitoring mass selective detector (SIM Modus).
- D. The applicant shall submit a report for TDA and MDA that presents the results of the following test method: Extraction of a 0.5 g composite sample in a 5 ml syringe is carried out with 2.5 ml of 1% aqueous acetic acid solution. The syringe is emptied and

the liquid returned to the syringe. After repeating this process 20 times, the final extract is kept for analysis. A further 2.5 ml of 1% aqueous acetic acid is then added to the syringe and another 20 extraction cycles are completed. The extract is then combined with the first extract and diluted to 10 ml in a volumetric flask with acetic acid. The extracts are analysed using high-performance liquid chromatography (HPLC-UV) or HPLC-MS. If HPLC-UV is carried out and interference is suspected, reanalysis using high performance liquid chromatography-mass spectrometry (HPLC-MS) must be performed.

- E. The applicant shall submit a report for organotin compounds that presents the results of the following test method: A composite sample with a weight of 1-2 g is mixed with at least 30 ml of extracting agent for a duration of 1 hour in an ultrasonic bath at room temperature. The extracting agent is composed as follows: 1750 ml methanol + 300 ml acetic acid + 250 ml buffer (pH 4.5). The buffer is a solution of 164 g of sodium acetate in 1200 ml of water and 165 ml acetic acid, which is diluted with water to a volume of 2000 ml. After extraction, the alkyl tin species are derivatized by adding a solution of 100 µl of sodium tetraethylborate in tetrahydrofuran (THF) (200 mg/ml THF). The derivative is extracted with n-hexane and the sample undergoes a second extraction procedure. Both hexane extracts are combined and then used to determine the organotin compounds using gas chromatography with mass selective detection in SIM mode.

b) **VOC emissions after 72 hours**

The test chamber concentrations for the following volatile organic compounds (VOC) after 72 hours must not exceed the limit values in Table 5:

Table 2: Limit values for VOC emissions after 72 hours for PUR foam

Substance (CAS number)	Limit value (mg/m ³)
Formaldehyde (50-00-0)	0.005
Toluene (108-88-3)	0.1
Styrene (100-42-5)	0.005
Each detectable compound classified in categories C1A or C1B according to the Regulation (EC) No 1272/2008	0.005
Sum of all detectable compounds classified in categories C1A or C1B according to Regulation (EC) No 1272/2008	0.04
Aromatic hydrocarbons	0.3
VOC (total)	0.5

Compliance verification

The applicant shall submit a declaration of compliance with requirement 3.5.2(b), accompanied by test results, where relevant, verifying compliance with the limit values in Table 5. The following combination of samples and test chambers are accepted:

- 1 sample with dimensions of 25 × 20 × 15 cm is placed in a 0.5 m³ test chamber;

or

- 2 samples with dimensions of 25 × 20 × 15 cm are placed in a 1.0 m³ test chamber.

The foam sample is placed on the bottom of an emission test chamber and conditioned for three days at a temperature of 23 °C and a relative humidity of 50% in accordance with the standards ISO 16000-9 and ISO 16000-11. The air exchange rate n is 0.5 per hour at a loading factor L for the test chamber of 0.4 m²/m³ (= total exposed surface of the sample in relation to chamber dimensions without sealed edges and the back of the sample).

Sampling will take place 72 ± 2 hours after loading the chamber for a duration of one hour with Tenax TA tubes and DNPH cartridges for the VOC and formaldehyde analysis. The VOC emission will be trapped in Tenax TA adsorbent tubes and analysed using thermal desorption GC-MS in accordance with the standard ISO 16000-6.

The results will be expressed semi-quantitatively as toluene equivalents. All specified individual components from a concentration limit ≥ 1 µg/m³ will be recorded. The total VOC value is the sum of all components with a concentration ≥ 1 µg/m³ that elute during the retention time windows between *n*-hexane (C6) (inclusive) and *n*-hexadecane (C16) (inclusive). The sum of all detectable compounds classified in categories C1A or C1B according to Regulation (EC) No 1272/2008 is the sum of all these substances with a concentration ≥ 1 µg/m³. If the test results exceed the standard limits, substance specific quantification needs to be performed. Formaldehyde can be determined by collecting the sampled air on a DNPH cartridge and subsequently analysing it using HPLC/UV in accordance with the standard ISO 16000-3. Testing in accordance with the standard CEN/TS 16516 will be considered as equivalent to the ISO 16000 series of standards.

c) **Blowing agents**

It is not permitted to add halogenated organic compounds as blowing agents or auxiliary blowing agents.

Compliance verification

The applicant shall submit a declaration from the foam manufacturer confirming that these substances have not been added.

3.6 General requirements

3.6.1 General exclusion of substances with certain properties

The following requirements apply to dyes and textile auxiliaries:

- a) Dyes and textile auxiliaries must not contain any substances which are identified as particularly alarming under the European Chemicals Regulation REACH (1907/2006/EC)¹⁵ and which have been incorporated into the list drawn up in accordance with Article 59, Paragraph 1 of the REACH Regulation (so-called "list of candidates"). The version of the list of candidates at the time of application is valid¹⁶. If the substance is part of a preparation (a mixture), its concentration must not exceed 0.10% by mass. If a stricter, more specific concentration limit is specified for a substance in a mixture in the CLP Regulation (EC/1272/2008) then this is valid.
- b) Dyes and textile auxiliaries must comply with the limit values in Chapter 1 of the ZDHC MRSL. The current version of the ZDHC MRSL at the time of application is valid.¹⁷
- c) Dyes and textile auxiliaries, which according to the criteria of Regulation (EC) No 1272/2008¹⁸ are assigned the following H Phrases named in Table 6 or which meet the criteria for such classification, must not be added.¹⁹
- d) The following are exempt from regulations a) and c): Impurities in concentrations that are not specified in the safety data sheet. The components listed on the safety data sheet must correspond with the regulations according to Annex II, No. 3, of the REACH regulation (EC/1907/2006). If the substance in this case is part of a preparation (a mixture) then its concentration may not exceed the general generic cut-off values according to the CLP Regulation (EC/1272/2008). If a stricter, more specific concentration limit is specified for a substance in a mixture then this is valid.
- e) The following shall be exempt from regulation c): Monomers or additives that turn into polymers during the manufacture of plastics or are chemically (covalently) bound to the plastic if their residual concentrations are below the classification thresholds for mixtures.
- f) Upon evaluation by the Federal Environmental Agency (Umweltbundesamt), further exemptions from regulation c) may be adopted, provided that these are technologically non-

¹⁵ 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

¹⁶ The list of candidates in its currently valid version can be found at:

<https://echa.europa.eu/de/candidate-list-table>

¹⁷ <http://www.roadmaptozero.com/programme/manufacturing-restricted-substances-list-mrsl-conformity-guidance/>

¹⁸ Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 concerning the classification, labelling and packaging of substances and mixtures (CLP Regulation).

¹⁹ The harmonized classifications and labellings of dangerous substances can be found in Part 3 of Annex VI to Regulation (EC) No 1272/2008 (CLP Regulation).

substitutable substances and consumer safety continues to be guaranteed. A list of the approved exemptions can be found in Appendix C.

Table 3: H Phrases according to the CLP Regulation

Regulation (EC) No. 1272/2008 (CLP Regulation)	Wording
Toxic substances	
H300	Fatal if swallowed
H301	Toxic if swallowed
H304	May be fatal if swallowed and enters airways
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H330	Fatal if inhaled
H331	Toxic if inhaled
H370	Causes damage to organs
H371	May cause damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
Carcinogenic, mutagenic and reprotoxic substances	
H340	May cause genetic defects
H341	Suspected of causing genetic defects
H350	May cause cancer
H350i	May cause cancer if inhaled
H351 ²⁰	Suspected of causing cancer
H360F	May damage fertility
H360D	May damage the unborn child
H360FD	May damage fertility May damage the unborn child
H360Fd	May damage fertility Suspected of damaging the unborn child
H360Df	May damage the unborn child Suspected of damaging fertility
H361f	Suspected of damaging fertility
H361d	Suspected of damaging the unborn child
H361fd	Suspected of damaging fertility Suspected of damaging the unborn child
H362	May cause harm to breast fed children
Water-hazardous substances	
H400	Very toxic to aquatic life

²⁰ Except titanium dioxide, because its classification only applies to inhalable powders.

Regulation (EC) No. 1272/2008 (CLP Regulation)	Wording
H410	Very toxic to aquatic life with long-lasting effects
H411	Toxic to aquatic life with long-lasting effects
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life
Other Health and Environmental Effects	
H420 ²¹	Harms public health and the environment by destroying ozone in the upper atmosphere (replaces EUH059)
Sensitizing substances	
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317	May cause an allergic skin reaction

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmation from their suppliers verifying compliance with the requirements. If requested to do so by RAL gGmbH, the applicant shall submit the relevant safety data sheets.

Deviations apply for some substances and are listed in Table 7.

Table 4: Deviations for substances

Substance group	Hazard classification affected by the exemption		Exemption conditions
Auxiliaries including carriers, fastness enhancers, levelling agents, dispersing agents, surfactants, thickeners, binding agents	H317	May cause an allergic skin reaction	The recipes must be formulated using automatic metering systems and the process must follow standard operating procedures. H317 (1B) substances added to the recipe must not have a higher concentration than 0.1% by mass in the final product.
	H371	May cause damage to organs	
	H372	Causes damage to organs through prolonged or repeated exposure	
	H411	Toxic to aquatic life with long-lasting effects	
	H412	Harmful to aquatic life with long lasting effects	
	H413	May cause long lasting harmful effects to aquatic organisms.	
Enzymatic desizing agents	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	The recipes must be formulated using automatic metering systems and the process

²¹ Commission Regulation (EC) No 286/2011 of 10 March 2011 amending Regulation (EC) No 1272/2008

Substance group	Hazard classification affected by the exemption		Exemption conditions
			<p>must follow standard operating procedures.</p> <p>A safety data sheet of the desizing agent, as well as the confirmation of the GMO free production of the enzyme is to be submitted.</p>
Dyes for dyeing and non-pigment printing	H301	Toxic if swallowed	<p>Dyeing processes using reactive, direct, vat and sulphur dyes with these classifications must meet at least one of the following conditions:</p> <ul style="list-style-type: none"> • Use of high affinity dyes • Achievement of a reject rate of less than 3.0% • Use of colour matching instrumentation • Use of standard operating procedures for the dyeing process • Use of colour removal to treat waste water (see criteria 16a)) <p>Solution dyes and/or digital printing are excluded from these conditions.</p> <p>Dye houses and printers must use dust free dye formulations or automatic dosing and dispensing of dyes to minimise worker exposure.</p>
	H311	Toxic in contact with skin	
	H331	Toxic if inhaled	
	H317	May cause an allergic skin reaction	
	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	
	H411	Toxic to aquatic life with long-lasting effects	
	H412	Harmful to aquatic life with long lasting effects	
H413	May cause long lasting harmful effects to aquatic life		

3.6.2 Special substance requirements in finishing processes

These special substance requirements apply in addition to the general substance requirements or make them more concrete by once again explicitly pointing out particularly problematic substances for certain processing steps.

3.6.2.1 For all process steps

3.6.2.1.1 Quaternary ammonium compounds

Except for fastness enhancers, quaternary ammonium compounds are not permitted. Siliconquats and esterquats may be used. Siliconquats, esterquats and fastness enhancers must comply with the requirements under 3.6.1.

3.6.2.1.2 Use of nanomaterials

The use of technically produced nanomaterials with the H Phrases listed in Paragraph 3.6.1 is not permitted. The classification must be carried out based on suitable data for the nanoform of the substance added to the product.

3.6.2.2 In the pretreatment process

3.6.2.2.1 Chlorinated bleaching agents

The use of chlorinated bleaching agents is not permitted.

3.6.2.3 In the dyeing process

3.6.2.3.1 Mordant dyes containing chromium salts

It is not permitted to use mordant dyes containing chromium salts.

3.6.2.3.2 Metal complex dyes with copper, chromium or nickel

In the case of all dyeing processes in which metal complex dyes are part of the dye formula, the absorption rate must be at least 93% for each of the metal complex dyes used (for the process). In the case of dyes used for cellulose in which metal complex dyes are part of the dye formula, the absorption rate must be at least 80% for each of the metal complex dyes used (for the process).

3.6.2.4 In the finishing process

3.6.2.4.1 Biocidal and biostatic products

The use of biocidal products, as defined in the Biocidal Directive (EU) 528/2012²², and biostatic products²³ is not permitted. In-can preservatives are exempted.

3.6.2.4.2 Flame retardant materials

The flame-retarding effect should preferably be achieved by use of flame-resistant fibres or by means of the structure of the fabric.

The use of flame retardants in the finishing of clothing textiles is not permitted.

²² Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products

²³ All substances with an inhibitory effect on growth and reproduction shall be considered as biostatic products.

Finishing with flame retardants, which comply with the requirements according to 3.6.1, on house and home textiles, protective work clothing and other technical textiles can be approved after examination by the Federal Environmental Agency. Halogenated flame retardants may not be added to the product.

Products finished with flame retardant substances must be correspondingly labelled.

3.6.2.4.3 Halogenated substances

It is not permitted to use halogenated substances as such or in mixtures as anti-felt agents for finishing products.

3.6.2.4.4 Cerium compounds

It is not permitted to use any cerium compounds for the weighting of yarn or fabrics.

3.6.2.4.5 Perfluorinated and polyfluorinated chemicals (PFCs)

The use of perfluorinated and polyfluorinated chemicals (PFCs) is not permitted.

3.6.2.5 Volatile organic compounds (VOC) used in impregnating, printing or coating

The ready-to-use formulas for the impregnation liquors, printing pastes or coating compounds must not contain more than 5% volatile organic compounds (VOCs).

Compliance verification

The applicant shall declare compliance with the requirements according to Paragraph 3.6.2 in Annex 1 and submit confirmation from the chemical supplier or textile finisher verifying compliance with these requirements.

Regarding the requirement in 3.6.2.4.6, the applicant shall declare in Annex 1 that he/she either uses no auxiliaries to impregnate, print or coat the products or that he/she complies with the above-mentioned requirement. If such auxiliaries have been used, the applicant shall submit a test report/suitable documentation²⁴ from his/her textile finisher verifying compliance with this requirement.

If flame retardant materials have been added, the applicant shall name and identify them using their CAS Registry No. to RAL gGmbH.

A manufacturer's declaration must be produced to disclose whether nanomaterials have been added or not. If yes, the applicant shall specify what nanomaterials have been added and what form of the substance was used for the tests and the classification.

3.6.3 Requirements for the degradability of textile auxiliaries

At least 90% by mass of the ingredients of fabric softeners, complexing agents and surfactants must be readily biodegradable under aerobic conditions or inherently biodegradable and/or eliminable in waste water treatment plants. Surfactants must be readily biodegradable under aerobic

²⁴ This could include reports on a test of the printing pastes for VOCs, when it is not possible to calculate the VOC content, for example, if the VOC content of a component is not available. Other relevant documents could be safety data sheets and supplier declarations on the VOC content in the components, declarations from the textile finisher or the formula used for calculating the VOC content.

conditions. All non-ionic and cationic surfactants must also be readily biodegradable under anaerobic conditions.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmations from the textile finisher or the chemical suppliers.

The applicant shall submit additional documentation (safety data sheets and/or test reports) verifying compliance with the requirements. One of the following test methods can be used to verify compliance with the requirements. The applicant shall specify which test method was used and state the corresponding individual test results when submitting the application.

The requirements for the aerobic biodegradability of surfactants correspond to the information in paragraph i) of the verifications for 3.2.3.2 and for the aerobic biodegradability of complexing agents and fabric softeners they correspond to those in paragraph ii). The corresponding ISO standards and REACH methods²⁵ will be recognized as equivalent.

The test for anaerobic degradability shall be based on OECD test 11734, OECD 311 or an equivalent test method, with the requirement of 60% ultimate degradability under anaerobic conditions. In order to verify at least 60% degradability under anaerobic conditions, test methods can also be used that simulate the conditions in a corresponding anaerobic environment.

The latest version of the DID list can be used for the evaluation.

In the case of additives not included in the DID list, the following process can be used to verify the biodegradability under anaerobic conditions:

- a. *Apply reasonable extrapolation. Use test results obtained with one raw material to extrapolate the ultimate anaerobic degradability of structurally related surfactants. Where anaerobic biodegradability has been confirmed for a surfactant (or a group of homologues) according to the DID list, it can be assumed that a similar type of surfactant is also anaerobically biodegradable (e.g. C12-15 A 1-3 EO sulphate [DID No 8] is anaerobically biodegradable, and a similar anaerobic biodegradability may also be assumed for C12-15 A 6 EO sulphate). Where anaerobic biodegradability has been confirmed for a surfactant by use of an appropriate test method, it can be assumed that a similar type of surfactant is also anaerobically biodegradable (e.g. literature data confirming the anaerobic biodegradability of surfactants belonging to the group alkyl ester ammonium salts may be used as documentation for a similar anaerobic biodegradability of other quaternary ammonium salts containing ester-linkages in the alkyl chain(s)).*
- b. *Screening test for anaerobic degradability. If a new test is necessary, perform a screening test according to EN ISO 11734, ECETOC No 28 (June 1988), OECD 311 or an equivalent method.*
- c. *Low-dosage degradability test. If a new test is necessary and difficulties are experienced in the screening test (e.g. inhibition due to toxicity of the test substance),*

²⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:142:0001:0739:DE:PDF>
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:220:0001:0094:de:PDF>

repeat the test using a low dosage of the surfactant and monitor degradation by C14 measurements or chemical analyses. Testing at low dosages may be performed in accordance with OECD 308 (August 2000) or an equivalent method.

3.6.4 Requirements for waste water from the textile finishing process

3.6.4.1 Requirements for waste water at the discharge point (direct discharge)

Waste water from wet-processing sites (except waste water from water retting of flax and other bast fibres) shall, when discharged to surface waters, not exceed the following limits:

- COD: 160 mg/l (expressed as an average yearly value),
- BSB5: 30 mg/l,
- Sulphite: 1 mg/l,
- Ammonium nitrogen: 10 mg/l,
- Total nitrogen: 20 mg/l,
- Phosphorous: total 2 mg/l,
- The dye must comply with the following values:
Spectral absorption coefficient at:
 - ♦ 436 nm (yellow spectral region) 7 m⁻¹
 - ♦ 525 nm (red spectral region) 5 m⁻¹
 - ♦ 620 nm (blue spectral region) 3 m⁻¹
- Toxicity to fish eggs GEI: 2.
- The pH value of the waste water discharged to surface waters must be between 6 and 9 (unless the pH value of the receiving waters is outside this range) and the temperature must be below 35 °C (unless the temperature of the receiving waters is already above this limit).

This requirement shall not apply if it can be proven that the discharge into the urban waste water treatment plant has been approved and the urban waste water treatment plant meets at least the requirements of the Council Directive of 21 May 1991 concerning urban waste water treatment (91/271/EEC).

3.6.4.2 Requirements for waste water before mixing (direct and indirect discharge)

The waste water shall not exceed the following values before it is mixed with the other waste water:

- AOX: 0.5 mg/l
- Sulphide: 1 mg/l
- Copper: 0.5 mg/l
- Nickel: 0.5 mg/l
- Total chromium: 0.5 mg/l
- Tin: 2 mg/l
- Zinc: 2 mg/l

Compliance verification

The applicant shall declare compliance with the requirements in 3.6.4.1 and 3.6.4.2 in Annex 1 and submit a declaration of conformity from the operator of the textile finishing plant and test reports verifying compliance with the requirements in accordance with Annex 38 of the German

Waste Water Ordinance or equivalent international test reports. The following test methods can be used here (on the basis of a qualified random sample or a 2-hour mixed sample, the requirement for AOX applies to the sample):

- COD: ISO 6060 or DIN 38409-41 or DIN 38409-44 or DIN ISO 15705
- Copper and nickel: ISO 8288,
- Chromium: ISO 9174 or DIN EN 1233,
- Sulphide: DIN 38405-27 or ISO 10530,
- Sulphite: DIN EN ISO 10304-3,
- Toxicity to fish eggs: DIN EN ISO 15088,
- AOX (chloride content < 5g/l): DIN EN ISO 9562,
- Spectral absorption coefficient: DIN 38404-3,
- Ammonium nitrogen: DIN EN ISO 11732,
- Total nitrogen: DIN EN ISO 12260,
- Total phosphorous: DIN EN ISO 11885,
- Tin: DIN EN ISO 11885,
- Zinc: DIN EN ISO 11885.

The waste water treatment plant must be regularly monitored. In addition, the applicant shall submit a declaration from the operator of the textile finishing plant about the frequency of the measurements of the discharge values (at least every six months).

As an alternative to measuring the copper, nickel and chromium contents, the applicant can submit a declaration from the operator of the textile finishing plant that metal complex dyes containing copper, chromium or nickel do not form part of the dye formula.

If discharged to an urban waste water treatment plant, the applicant shall also enclose a notice of approval for the textile finishing plant verifying that the discharge process has been approved and that the urban waste water treatment plant meets at least the requirements of Directive 91/271/EEC.

3.6.5 Requirements for emissions to air in the textile finishing process

In the thermosetting, thermosoling, coating, impregnating or finishing of textiles, including the associated drying facilities, the sum of the organic substances as total carbon must not exceed 0.8 g C per kg of textiles.

In addition, a maximum of 0.4 g C per kg of textiles may be emitted from carry-overs from upstream processes and from residual preparations in each case.

The requirements in the German Clean Air Directive (TA Luft) apply.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit confirmation from the textile finishing plant verifying compliance with this requirement.

In addition, the operator of the textile finishing plant shall submit either a report in accordance with Appendix D with the projected emissions based on the emission factors or a test report in accordance with DIN EN 12619. In the case of a test carried out in accordance with DIN EN 12619, the product-related emission factor shall be determined from the measured concentration value and the actual air/product ratio. The calculation formula, including an example calculation, can be found in Appendix D.

3.6.6 Requirements for specific substances and testing of the end product

The requirements for specific substances apply in addition to the requirements in Paragraphs 3.6.1 and 3.6.2 and put them into concrete terms by stipulating testing of the end product. Annual random analytical tests must be carried out in the case of recycled fibres.

3.6.6.1 Formaldehyde

The amount of free and partly hydrolysable formaldehyde in the final fabric must not exceed 20 mg/kg in clothing, home textiles and bedding for babies and young children under 3 years old, and 75 mg/kg for all other textiles.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. The applicant shall also submit test results in accordance with the DIN EN ISO 14184-1 test method.²⁶

The applicant shall declare in Annex 1 the intended age group for the end product in the application and state the clothing sizes included in the application in the case of clothing.

3.6.6.2 Extractable heavy metals

The following limit values in Table 8 must not be exceeded by the extractable heavy metals.

Table 5: Extractable heavy metals

Extractable heavy metals	Limit values ²⁷ in mg/kg
Antimony	30
Arsenic	0.2
Lead	0.2
Cadmium	0.1
Chrome	1
Cr(VI)	< 0.5
Cobalt	1
Copper	25
Nickel	1
Mercury	0.02

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. The applicant shall also submit a test report according to DIN 54233 or according to DIN EN 16711-2.

Chromium (VI) can also be measured in accordance with method DIN 38405-24 (D-24), although the detection limit must not exceed 0.5 mg/kg.

²⁶ Test reports in accordance with the Öko-Tex Standard 100 will also be recognised.

²⁷ Corresponds to category I of OEKO-TEX

3.6.6.3 Nickel and its compounds

If nickel is used for metal objects that come into contact with the skin for long periods of time, the migration value for metal alloys that come into contact with the skin applies (0.5 ug/cm²/week).

Compliance verification

The applicant shall declare in Annex 1 that he/she either does not use any nickel-containing metal alloys or declare compliance with the requirement and submit a certificate from the supplier verifying that the metal components used comply with this requirement. Alternatively, the applicant can also submit a test report from a testing institution approved for this test verifying the harmlessness of the dermal exposure. DIN EN 1811 in combination where relevant with DIN EN 12472 can be used as the test method.

3.6.6.4 Chlorophenols

The sum of chlorophenols and their salts and esters in the final fabric must not exceed the following limit values (Table 9).

Table 6: Limit values for chlorophenoles in final fabrics

Chlorophenole	Limit values²⁸ in mg/kg
Dichlorphenole (DCP)	0.5
Monochlorphenole (MCP)	0.5
Pentachlorphenole (PCP)	0.05
Tetrachlorphenole (TeCP)	0.05
Trichlorphenole (TrCP)	0.2

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. The applicant shall also submit test results in accordance with the test method for chlorophenols based on DIN EN ISO 17070.

3.6.6.5 Phthalates and plasticizers

The sum of the phthalates and plasticizers listed in Appendix E, No 2 must not exceed a maximum of 1,000 mg/kg.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a corresponding test report. The test shall be carried out in accordance with DIN EN ISO 18856 or EN 14602. For the test for TCEP, suitable test methods used by testing laboratories accredited according to DIN EN ISO 17025 are accepted.

The sum of the phthalates and plasticizers must not exceed a maximum of 1000 mg/kg.

²⁸ Corresponds to category I of OEKO-TEX.

3.6.6.6 Organotin compounds

The content of organotin compounds must not exceed the limit values stated in Table 10.

Table 7: Limit values for organotin compounds in final fabrics

Organotin compounds	Limit values ²⁹ in mg/kg
Tributyltin compounds (TBT)	0.5
Dibutyltin compounds (DBT)	1
Diocetyl tin compounds (DOT)	1
Monobutyltin compounds (MBT)	1
Triphenyltin compounds (TPT)	1

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. The applicant shall also submit the test results in accordance with the test method DIN EN ISO 17353 or another suitable test method³⁰.

3.6.6.7 Dyes

Azo dyes used on the yarns, fabrics and finished products added to the product that may cleave to one of the aromatic amines named in Appendix E must not exceed a limit value of 20 mg/kg. A limit value of 50 mg/kg applies to the dispersion dyes named in Appendix E.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and verify that the dyes in Appendix E No. 1 have not been used in the yarns, fabrics and finished products added to the product.

The applicant shall also submit the test results in accordance with the test method DIN EN 14362-1 and DIN EN 14362-3 (for arylamine) and DIN 54231 (for dispersion dyes).

(Note: Tests to detect the presence of 4-aminoazobenzene can result in false positive values. Therefore, a control measurement is recommended).

3.6.6.8 Chlorinated benzenes and toluenes

The content of the compounds listed in Appendix E, No. 3 must not exceed 1 mg/kg.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. The applicant shall also submit test results in accordance with the test method DIN 54232.

²⁹ Corresponds to category I of OEKO-TEX.

³⁰ Test methods used by testing laboratories accredited according to DIN EN ISO 17025 are accepted.

3.6.6.9 Polycyclic aromatic hydrocarbons

For the synthetic fibres, yarns and threads used in the product, as well as the plastic materials, the maximum value for polycyclic aromatic hydrocarbons (PAH) for GS Mark approval in category 2 (with foreseeable skin contact for longer than 30 seconds) must not be exceeded.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit the GS certificate or the test report verifying compliance with the stated limit values. The measurements should be taken in accordance with the guidelines in the AfPS GS 2014:01 PAK document "Testing and assessment of polycyclic aromatic hydrocarbons (PAHs) in the course of awarding the GS mark".

3.6.6.10 Dimethylformamide, dimethylacetamide and N-methylpyrrolidone

The content of dimethylformamide (DMF), dimethylacetamide (DMAc) and N-methylpyrrolidone (NMP) in polymer coatings or seam sealing tapes based on polyurethane must not exceed the value of 0.1% by mass.

Compliance verification

If the applicant uses PU coatings, he/she shall submit a confirmation from his/her suppliers verifying that the above named substances are not used and submit a corresponding test report. The test for DMF shall be carried out using methanol extraction, GC/MS. The test for DMAc shall be carried out using extraction with methanol, GC/MS or LC/MS, while for NMP it shall be carried out using a 2 step extraction process with THF and methanol, GC/MS.

3.7 Fitness for use

3.7.1 Change in dimensions during washing and drying

After washing and drying in accordance with the care instructions, the change in the dimensions of the final textile must not exceed the following (Table 11):

Table 8: Tolerances for the change in dimensions of the textile end product or type of material after washing and drying

Textile end product or type of material	Change in dimensions after washing and drying
Knitted fabrics	+/- 5 %
Chunky knit	+/- 6 %
House and home textiles	+/- 8 %
Woven fabrics:	
Cotton and cotton mix	+/- 3 %
Linen, flax and silk	+/- 3 %
Cotton and cotton mix for bedding	+/- 5 %
Wool mix	+/- 2 %
Synthetic fibres	+/- 2 %

Textile end product or type of material	Change in dimensions after washing and drying
Bathroom linen, including terry towelling and fine rib fabrics	+/- 8 %
Socks and hosiery	+/- 8 %

These requirements do not apply to:

- Fibres or yarn;
- End products clearly labelled with "dry clean only" or equivalent (insofar as such end products are generally labelled accordingly in practice);
- Furniture fabrics that are not removable and washable.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report for verification. The test shall be carried out in accordance with the test methods DIN EN ISO 6330 and DIN EN ISO 5077 taking into account the following modification: three washes at temperatures indicated on the end product with tumble drying after each washing cycle, insofar as no other drying processes are indicated on the end product.

3.7.2 Colour fastness to washing

The stain resistance and colour fastness to washing in accordance with the care instructions must be at least levels 3-4 according to ISO 105 (grey scale A 03).

This requirements does not apply to end products that are clearly labelled with "dry clean only" or equivalent labelling (insofar as these products are generally labelled accordingly in practice). In addition, it does not apply to indigo dyed denim, white products, end products that are neither dyed nor printed, or to non-washable furniture fabrics.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report for verification. The test is carried out in accordance with test method DIN EN ISO 105-C06 (single wash, at temperature marked on the product, with perborate powder).

3.7.3 Colour fastness to perspiration (acid, alkaline)

The colour fastness to perspiration (acid and alkaline) must be at least levels 3-4 according to ISO 105 (grey scale A 03) (colour change and staining). A level of 3 is nevertheless accepted when fabrics are both dark coloured (standard depth > 1/1) and made of regenerated wool or contain more than 20% silk. This requirement does not apply to white products, end products that are neither dyed nor printed, furniture fabrics, curtains or similar textiles intended for interior decoration.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report for verification. The test is carried out in accordance with the test method DIN EN ISO 105-E04 (acid and alkaline, comparison with multi-fibre fabric).

3.7.4 Colour fastness to rubbing

The colour fastness to wet rubbing must be at least levels 2-3 according to ISO 105 (grey scale A 03). Level 2 is accepted for indigo dyed denim. This requirement does not apply to white products or end products that are neither dyed nor printed.

The colour fastness to dry rubbing must be at least level 4 according to ISO 105 (grey scale A 03). Level 3-4 is accepted for indigo dyed denim. This requirement does not apply to white products, end products that are neither dyed nor printed, curtains or similar textiles intended for interior decoration.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report for verification. The test is carried out in accordance with test method DIN EN ISO 105-X12.

3.7.5 Colour fastness to light

The colour fastness of furniture, curtains or drapes to light must be at least level 5 according to ISO 105 (grey scale A 03). For all other products, the colour fastness to light must be at least level 4. Level 4 is accepted if 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.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report for verification. The test is carried out in accordance with test method DIN EN ISO 105-B02.

3.7.6 Colour fastness to saliva and perspiration

The textile materials must be colour fast to the effects of saliva. The remaining dyed materials must be colour fast to the effects of saliva and perspiration. This corresponds to level 5 of the currently valid standard DIN 53160 Parts 1 and 2. This requirement applies to babies and children up to 36 months old. This requirement does not apply to white products or end products that are neither dyed nor printed.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report for verification. The test shall be carried out in accordance with §64 of the LFGB (German Food and Feed Code), BVL B 82.10-1 in combination with DIN 53160 Parts 1 and 2.

3.7.7 Fabric resistance to pilling and abrasion

Nonwoven fabrics and knitted garments, accessories and blankets made of wool, wool mixes and polyester (including fleece), must resist pilling up to a minimum rating of 3. Woven cotton fabrics used for garments must resist pilling up to a minimum rating of 3. Polyamide tights and leggings must resist pilling up to a minimum rating of 2.

Compliance verification

The applicant shall submit reports on the completion of suitable tests for the relevant substrate: For knitted and nonwoven materials: ISO 12945-1 Pilling box method. For woven fabrics: ISO 12945-2 Martindale method.

3.7.8 Durability of function

In the case of finishes, treatments and additives that impart a water repellent function, a flame retardant function or an easy care function (also referred to as non-crease or permanent press) to the textile end products when they are in use, this functionality must be durable according to the values and parameters defined in the following requirements. In the case of a water repellent function, the consumer must be provided with care instructions on how to maintain this functionality.

a) Water repellent function

The functionality of the water repellent finish must still be 80 out of 90 after 5 domestic washing and drying cycles at 40 °C or after 5 industrial washing and drying cycles at a minimum of 75 °C.

In the case of industrial washing cycles, the temperature for garments with taped seams may be reduced to 60 °C.

Care instructions on the reimpregnation of the product must be supplied with the textile.

Compliance verification

The applicant shall submit test reports that were carried out according to the following standards based on the relevant end product: For all products, domestic washing cycles according to ISO 6330 or industrial washing cycles according to ISO 15797, in combination with ISO 4920 in each case.

b) Flame retardant functions

Washable end products must also retain their functionality after 25 industrial washing and drying cycles in accordance with the care instructions.

Compliance verification

The applicant shall submit test reports that were carried out according to the following standards based on the relevant end product: For domestic washing cycles ISO 6330 or industrial washing cycles ISO 10528, in combination with ISO 12138 in each case.

c) Easy care function (also non-crease or permanent press)

Natural fibre products must achieve an SA-3 fabric smoothness grade and blended natural and synthetic fibre products an SA-4 fabric smoothness grade after 10 domestic washing and drying cycles at 40 °C.

Compliance verification

The applicant shall submit test reports according to the standard ISO 7768 – process for assessing the smoothness appearance of fabrics after domestic washing and drying.

3.8 Packaging

The plastics used are not permitted to contain any halogenated polymers. If the packaging is made out of paper or cardboard, it must contain at least 80% recycled materials. Packaging materials are considered recycled if product waste (post-consumer waste) has been subjected to a material recycling process.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a sample of the product packaging (photo) to RAL gGmbH. The applicant shall submit verification of the proportion of recycled materials in the packaging.

3.9 Consumer information

Insofar as the textile end products are sold in Germany, the consumer information must also be fully provided in German.

The fibres used in the end product must be declared in accordance with Regulation (EC) No 1007/2011 of the European Parliament and of the Council³¹. In addition, care and cleaning information must be provided in the form of textile care symbols in accordance with the guidelines of GINETEX³² or ISO EN DIN 3758. The standards ISO 15797 and ISO 10023 apply to industrial washing textiles.

3.10 Working conditions

Textile products must meet the social product requirements of the Green Button for the processing stages covered by the GREEN BUTTON in the version of the GREEN BUTTON valid at the time of the application. These requirements include criteria for:

- Freedom of association and collective bargaining (ILO C087 and C098),
- Non-discrimination (ILO C100 and C111),
- employment contracts,
- Working hours and paid overtime (ILO C001),
- statutory minimum wages,
- Maternity Protection,
- valid for sub-companies,
- Minimum age (ILO C138),
- Prohibition of the worst forms of child labor (ILO C182 and R190),
- Prohibition of forced labor (ILO C029 and C105),
- prohibition of harassment,
- discipline and abuse,
- Health and safety at work (ILO C155)
- Conditions in the workplace
- Hygienic conditions (drinking water and sanitary facilities) as well

³¹ Regulation (EC) No 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council

³² <http://www.ginetex.de/>

- Building security and fire protection.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1, that he meets all applicable social product requirements of the GREEN BUTTON and submit the names and addresses of all suppliers and plants that carry out the processing stages of the product covered by the GREEN BUTTON at the time of the application in Annex 2.

Evidence is only required for products from non-EU countries.

If at least one of the processing stages of the product covered by the GREEN BUTTON takes place in a non-EU country at the time of the application, the applicant confirms with a corresponding certificate in Appendix 3 to the contract that the product is certified with one of the standards recognized in GREEN BUTTON in the social field or that the applicant is a member of one of the standards recognized in GREEN BUTTON in the social field.

If at least one of the processing stages of the product covered by the GREEN BUTTON takes place in a non-EU country at the time of the application and the product is not certified with any of the standards recognized by the GREEN BUTTON in the social field or the applicant is not a member of the standards recognized by the GREEN BUTTON in the social field, the applicant submits audit reports from independent, accredited laboratories (certification bodies according to ISO / IEC 17065) in Annex 4, which confirm the fulfillment of the social product requirements of the GREEN BUTTON and which have test procedures and test indicators that are at least equivalent to those of one of the standards recognized by the GREEN BUTTON.

3.11 Restriction on the sandblasting of denim

The use of manual and mechanical sandblasting to achieve distressed denim finishes is not permitted.

Compliance verification

The applicant shall provide detailed information on all production sites at which denim end products holding the environmental label are produced, as well as documentation and photos to verify the alternative processes with which the distressed denim effect is achieved.

3.12 Outlook

In any revision of the environmental label, the requirements in Paragraph 3.2.1 for cotton will be examined again against the background of the future availability of cotton and its resulting costs; this will focus in particular on an exception for certain degrees of fineness (> NM100). Fibres can be contaminated by fibres from GMO. A limit [in percent] for the permitted level of contamination is currently being discussed. The results of these discussions should also be taken into account in any revision.

In addition, the limit values for antimony extracted from polyester fibres in total digestion and using sweat extraction (Paragraphs 3.2.2.5 and 3.6.6.2), as well as the underlying EPA list of the excluded polycyclic aromatic hydrocarbons in Paragraph 3.6.6.9, will be discussed again and adjusted based on technical and scientific developments.

Furthermore, the findings on nanomaterials added to products (Paragraph 3.6.2.1.2) will be examined and compared to the latest technical and scientific developments and then included where relevant.

The requirements for waste water at the discharge point (direct discharge) (Paragraph 3.6.4.1) and before mixing (direct and indirect discharge) (Paragraph 3.6.4.2) need to be compared with those in the ZDHC list (at the current time (May 2017) level 2) and included where relevant.

The working conditions described under Paragraph 3.10 are fulfilled by the minimum social requirements for quality marks in the Federal Republic of Germany, which means the ILO fundamental labour standards 29, 87, 98, 100, 105, 111, 138 and 182, the issuing of an employment contract in written form and the validity of the rights for subcontracted work. Especially in the area of textile processing, the limiting of hours of work (ILO 1) and guaranteeing occupational safety and health (ILO 155) also apply. In line with the requirements of the Partnership for Sustainable Textiles (<https://www.textilbuendnis.com/de/>), these requirements are limited to the first stage (tier 1) of the supply chain. Both requirements will be examined as part of a revision to see if they remain up-to-date and whether to adapt them where relevant.

In December 2015, the European Commission adopted a new circular economy package (http://ec.europa.eu/environment/circular-economy/index_en.htm) in order to promote the idea of a circular economy even more strongly and thus use resources in an even more sustainable way. Findings from these processes that relate to textiles will be examined and adopted where relevant in any revision.

4 Applicants and Parties Involved

Manufacturers or distributors of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant's production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

5 Use of the Environmental Label

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2023.

They shall be extended by periods of one year each, unless terminated in writing by March 31, 2023 or March 31 of the respective year of extension.

After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

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Appendix A Verifications in the form of test reports for other certificates

DE UZ 154, 2017 Textiles	Bluesign	EU-Ecolabel for Textiles, 2014	GOTS, Version 5.0 March 1, 2017	OEKO-TEX Edition 02.2017 ³³
1.4 Compliance with legal requirements				
3 Requirements				
3.1 General regulations				
3.2 Requirements for textile fibres				
3.2.1 Requirements for the origin of natural fibres, cellulose and other plantbased raw materials				
3.2.2 Requirements for the production process for fibres				
3.2.2.1 Requirement for recycled fibres				
3.2.2.2 Production of flax and other bast fibres				
3.2.2.3 Wool and other keratin fibres				
3.2.2.3.1 Requirements for waste water from wool scouring before mixing (indirect discharge)				
3.2.2.3.2 Requirements for waste water from wool scouring at the discharge point (direct discharge)				
3.2.2.4 Man-made cellulose fibres (viscose, lyocell and modal)				
3.2.2.4.1 Halogen content				
3.2.2.4.2 Emissions to air				

³³ Der erweiterte Kriterienkatalog gemäß Anhang 6 und der damit verbundene Anhang 7 werden im Rahmen eines STANDARD 100 [...] nur dann angewendet, wenn vom Antragsteller im Antrag ausdrücklich gewünscht.

DE UZ 154, 2017 Textiles	Bluesign	EU-Ecolabel for Textiles, 2014	GOTS, Version 5.0 March 1, 2017	OEKO-TEX Edition 02.2017 ³³
3.2.2.4.3 Emissions to water in the production of viscose fibres				
3.2.2.5 Polyester fibres				
a. Antimony content				
b. Minimum content of PET				
c. Emissions of VOCs				
3.2.2.6 Polyamide fibres				
a. Production using material recycled from production- and/or consumer waste				
b. N ₂ O emissions				
3.2.2.7 Polyacrylic fibres				
3.2.2.7.1 Acrylonitrile				
3.2.2.7.2 Acrylonitrile emissions				
3.2.2.8 Elastane fibres				
3.2.2.8.1 Organotin compounds				
3.2.2.8.2 Aromatic diisocyanates				
3.2.2.9 Polypropylene fibres				
Lead-based pigments				
3.2.3 Requirements for the biodegradability of auxiliaries and finishing agents for fibres and yarns				
3.2.3.1 Sizing biodegradability				
3.2.3.2 Spinning solution additives				
3.3 Requirements for the production process for laminates and membranes				
i) content of recycled material				
ii) solvents				
c) adhesives used				
3.4 Requirements for down and feathers from water fowl (geese and ducks)				

DE UZ 154, 2017 Textiles	Bluesign	EU-Ecolabel for Textiles, 2014	GOTS, Version 5.0 March 1, 2017	OEKO-TEX Edition 02.2017 ³³
3.4.1 Requirements for waste water at the discharge point (direct discharge) in the processing of down and feathers	Green	Red	Green	Red
3.4.2 Hygiene requirements	Green	Red	Red	Red
3.5 Requirements for fillings	Red	Yellow	Yellow	Yellow
3.5.1 Latex				
a. restricted substances in latex foam	Red	Red	Red	Red
b. limits for VOC emissions for latex foam	Yellow	Red	Yellow	Red
3.5.2 Polyurethane (PUR)		Yellow	Yellow	
a. restricted substances and mixtures in PUR	Red	Yellow	Red	Red
b. limits for VOC emissions in PUR	Yellow	Yellow	Red	Red
3.6 General requirements				
3.6.1 General exclusion of substances with certain properties				
a. list of candidates	Green	Green	Green	Red
b. limit values of the ZDHC MRSL	Yellow	Yellow	Green	Red
c. H Phrases	Yellow	Green	Yellow	Red
d. exempt impurities	Green	Green	Red	Red
e. exempt chemically exhausted substances	Green	Green	Red	Red
f. further exemptions evaluated by UBA (Appendix C)	Green	Yellow	Yellow	Red
3.6.2 Special substance requirements in finishing processes				
3.6.2.1 For all process steps				
3.6.2.1.1 Quaternary ammonium compounds	Red	Yellow	Yellow	Red
3.6.2.1.2 Use of nanomaterials	Green	Yellow	Green	Red
3.6.2.2 In the pretreatment process				
3.6.2.2.1 Chlorinated bleaching agents	Yellow	Yellow	Green	Red
3.6.2.3 In the dyeing process				
3.6.2.3.1 Mordant dyes containing chromium salts	Green	Green	Green	Green

DE UZ 154, 2017 Textiles	Bluesign	EU-Ecolabel for Textiles, 2014	GOTS, Version 5.0 March 1, 2017	OEKO-TEX Edition 02.2017 ³³
3.6.2.3.2 Metal complex dyes with copper, chromium or nickel				
3.6.2.4 In the finishing process				
3.6.2.4.1 Biocidal and biostatic products				
3.6.2.4.2 Flame retardant materials				
3.6.2.4.3 Halogenated substances				
3.6.2.4.4 Cerium compounds				
3.6.2.4.5 Perfluorinated and polyfluorinated chemicals (PFCs)				
3.6.2.4.6 Volatile organic compounds (VOC) used in impregnating, printing or coating				
3.6.3 Requirements for the degradability of textile auxiliaries				
3.6.4 Requirements for waste water from the textile finishing process				
3.6.4.1 Requirements for waste water at the discharge point (direct discharge)				
3.6.4.2 Requirements for waste water before mixing (direct and indirect discharge)				
3.6.5 Requirements for emissions to air in the textile finishing process				
3.6.6 Requirements for specific substances and testing of the end product				
random tests in the case of recycled fibres				
3.6.6.1 Formaldehyde				
3.6.6.2 Extractable heavy metals				
3.6.6.3 Nickel and its compounds				
3.6.6.4 Chlorophenols				

DE UZ 154, 2017 Textiles	Bluesign	EU-Ecolabel for Textiles, 2014	GOTS, Version 5.0 March 1, 2017	OEKO-TEX Edition 02.2017 ³³
3.6.6.5 Phthalates and plasticizers	Green	Green	Green	Green
3.6.6.6 Organotin compounds	Green	Yellow	Green	Green
3.6.6.7 Dyes	Green	Green	Green	Green
3.6.6.8 Chlorinated benzenes and toluenes	Green	Green	Green	Yellow
3.6.6.9 PAH	Green	Red	Green	Yellow
3.6.6.10 DMF, DMAc and NMP	Green	Yellow	Red	Green
3.7 Fitness for use				
3.7.1 Change in dimensions during washing and drying	Red	Green	Green	Red
3.7.2 Colour fastness to washing	Red	Green	Green	Green
3.7.3 Colour fastness to perspiration (acid, alkaline)	Green	Green	Green	Green
3.7.4 Colour fastness to rubbing	Red	Green	Green	Green
3.7.5 Colour fastness to light	Red	Green	Green	Red
3.7.6 Colour fastness to saliva and perspiration	Green	Red	Green	Green
3.7.7 Fabric resistance to pilling and abrasion	Red	Green	Red	Red
3.7.8 Durability of function	Red	Green	Red	Red
3.8 Packaging	Red	Red	Green	Red
3.9 Consumer information	Red	Yellow	Yellow	Red
3.10 Working conditions	Yellow	Yellow	Green	Red
3.11 Restriction on the sandblasting of denim	Green	Green	Green	Red

Appendix B Legal regulations and testing standards

The current versions are named here, the valid versions of the standards at the time of application will be accepted.

- COUNCIL DIRECTIVE of 21 May 1991 concerning urban waste water treatment 91/271/EEC Table 1: Requirements for discharges from urban waste water treatment plants, the values for concentration or for the percentage of reduction shall apply
- 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, as well as amending Regulation (EC) No. 1907/2006 (CLP Regulation)
- German Waste Water Ordinance (Abwasserverordnung) in the version published on 24 July 2009 (BGBl. I p. 2205), which was changed by the Ordinance from 3 August 2009 (BGBl. I P. 2630)
- Regulation (EC) No 967/2008 of 29 September 2008 amending Regulation (EC) No 834/2007 on organic production and labelling of organic products
- Regulation (EC) No 834/2007 on organic production and labelling of organic products
- Regulation (EC) No 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council
- EUV 1007/2011Add:2011-12-21 Addendum to the Regulation (EC) No 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast)
- 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

- ISO 6060:1998-10 Water quality; determination of the chemical oxygen demand
- DIN 38409-41:1998-12 German standard methods for the examination of water, waste water and sludge; summary action and material characteristic parameters (Group H); determination of the chemical oxygen demand (COD) in the range over 15 mg/l (H41)
- DIN 38409-44:1992-05 German standard methods for the examination of water, waste water and sludge; parameters characterizing effects and substances (Group H); determination of the chemical oxygen demand (COD), ranging from 5 to 50 mg/l (H 44)
- DIN ISO 15705:2003-01 Water quality - Determination of the chemical oxygen demand index (ST-COD) - Small-scale sealed tube method
- ISO 11480:2017-05 Pulp, paper and board - Determination of total chlorine and organically bound chlorine
- DIN EN ISO 11885:2009-09 Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885:2007); German version
- DIN EN ISO 9562:2005-02 Water quality - Determination of adsorbable organically bound halogens (AOX) (ISO 9562:2004); German version EN ISO 9562:2004 (Halogen content (chlorine content < 5g/l))
- DIN 38405-27:1992-07 German standard methods for the examination of water, waste water and sludge; anions (Group D); determination of readily liberatet sulphide (D 27)
- ISO 10530:1992-09 Water quality; determination of dissolved sulfphide; photometric method using methylene blue
- ISO 17294-2:2016-07 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes
- VDI 3863 Sheet 1:1987-04 Measurement of gaseous emission; determination of acrylonitrile; gaschromatographic method; grab sampling
- VDI 3863 Sheet 2:1991-02 Gaseous emission measurement; determination of acrylonitrile; gas chromatographic method; sampling by absorption in low temperature solvents

- OECD No. 301 (1992) Ready Biodegradability
 - ♦ 301 A: DOC Die-Away
 - ♦ 301 B: CO₂ Evolution (Modified Sturm Test)
 - ♦ 301 C: MITI (I) (Ministry of International Trade and Industry, Japan)
 - ♦ 301 D: Closed Bottle
 - ♦ 301 E: Modified OECD Screening
 - ♦ 301 F: Manometric Respirometry

- DIN EN ISO 7827:2013-03 Water quality - Evaluation of the "ready", "ultimate" aerobic biodegradability of organic compounds in an aqueous medium - Method by analysis of dissolved organic carbon (DOC) (ISO 7827:2010); German version EN ISO 7827:2012

- DIN EN ISO 9439:2000-10 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Carbon dioxide evolution test (ISO 9439:1999); German version EN ISO 9439:2000

- DIN EN ISO 9408:1999-12 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium by determination of oxygen demand in a closed respirometer (ISO 9408:1999); German version EN ISO 9408:1999

- OECD No. 310: Ready Biodegradability - CO₂ in sealed vessels (Headspace Test)

- DIN EN ISO 14593:2005-09 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Method by analysis of inorganic carbon in sealed vessels (CO₂ headspace test) (ISO 14593:1999); German version EN ISO 14593:2005

- ISO 10708:1997-02 Water quality - Evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic compounds - Determination of biochemical oxygen demand in a two-phase closed bottle test

- OECD No. 302 B (1992) Zahn-Wellens / EMPA Test

- OECD No. 302 C (2009) Modified MITI Test (II)

- OECD No. 303 (2001) Simulation Test - Aerobic Sewage Treatment:
303 A: Activated Sludge Units - 303 B: Biofilms

- DIN EN ISO 9888:1999-11 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Static test (Zahn-Wellens method) (ISO 9888:1999); German version EN ISO 9888:1999

- DIN EN ISO 11733:2004-11 Water quality - Determination of the elimination and biodegradability of organic compounds in an aqueous medium - Activated sludge simulation test (ISO 11733:2004); German version EN ISO 11733:2004
- DIN EN 1162:1996-10 Feather and down - Test methods - Determination of the oxygen index number; German version EN 1162:1996
- DIN EN 1884:1998-11 Feather and down - Test methods - Determination of microbiological state; German version EN 1884:1998
- DIN EN 1163:1996-10 Feather and down - Test methods - Determination of the oil and fat content; German version EN 1163:1996
- DIN EN 1164:1998-10 Feather and down - Test methods - Determination of the turbidity of an aqueous extract; German version EN 1164:1998
- DIN EN ISO 3071:2006-05 Textiles - Determination of pH of aqueous extract (ISO 3071:2005); German version EN ISO 3071:2006
- DIN EN 12457-4:2003-01 Characterization of waste - Leaching; Compliance test for leaching of granular waste materials and sludges - Part 4: One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with limited size reduction); German version EN 12457-4:2002
- ISO 16000-9:2006-02 Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing - Emission test chamber method
- ISO 16000-6:2011-12 Indoor air - Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA® sorbent, thermal desorption and gas chromatography using MS or MS-FID
- ISO 16000-11:2006-02 Indoor air - Part 11: Determination of the emission of volatile organic compounds from building products and furnishing - Sampling, storage of samples and preparation of test specimens
- ISO 16000-3:2011-10 Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air - Active sampling method
- Regulation (EU) No. 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products
- DIN EN ISO 11734:1998-11 Water quality - Evaluation of the "ultimate" anaerobic biodegradability of organic compounds in digested sludge - Method by measurement of the biogas production (ISO 11734:1995); German version EN ISO 11734:1998

- OECD No. 311 (2006) Anaerobic Biodegradability of Organic Compounds in Digested Sludge: By Measurement of Gas Production
- OECD No. 308 (2002), Aerobic and Anaerobic Transformation in Aquatic Sediment Systems
- ISO 8288:1986-03 Water quality; Determination of cobalt, nickel, copper, zinc, cadmium and lead; Flame atomic absorption spectrometric methods
- DIN 38405-27:1992-07 German standard methods for the examination of water, waste water and sludge; anions (Group D); determination of readily liberatet sulphide (D 27)
- ISO 10530:1992-09 Water quality; determination of dissolved sulfide; photometric method using methylene blue
- DIN EN ISO 10304-3:1997-11 Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 3: Determination of chromate, iodide, sulphite, thiocyanate and thiosulfate (ISO 10304-3:1997); German version EN ISO 10304-3:1997
- DIN EN ISO 15088:2009-06 Water quality - Determination of the acute toxicity of waste water to zebrafish eggs (*Danio rerio*) (ISO 15088:2007); German version EN ISO 15088:2008
- ISO 9174:1998-07 Water quality - Determination of chromium - Atomic absorption spectrometric methods
- DIN EN 1233:1996-08 Water quality - Determination of chromium - Atomic absorption spectrometric methods; German version EN 1233:1996
- DIN 38404-3 2005-07 German standard methods for the examination of water, waste water and sludge - Physical and physical-chemical parameters (Group C) - Part 3: Determination of absorption in the range of the ultraviolet radiation, Spectral absorptions coefficient (C 3) Ammonium nitrogen
- DIN EN ISO 11732:2005-05 Water quality - Determination of ammonium nitrogen - Method by flow analysis (CFA and FIA) and spectrometric detection (ISO 11732:2005); German version EN ISO 11732:2005
- DIN EN ISO 12260:2003-12 standard, Water quality - Determination of nitrogen - Determination of bound nitrogen (TNb), following oxidation to nitrogen oxides; German version EN 12260:2003

- DIN EN 12619:2013-04 Stationary source emissions - Determination of the mass concentration of total gaseous organic carbon - Continuous flame ionisation detector method; German version EN 12619:2013
- DIN 54233-2:2014-07 Testing of textiles - Determination of metals - Part 2: Determination of extractable metals by hydrochloric acid
- DIN EN ISO 14184-1:2011-12 Textiles - Determination of formaldehyde - Part 1: Free and hydrolysed formaldehyde (water extraction method) (ISO 14184-1:2011); German version EN ISO 14184-1:2011
- DIN 38405-24:1987-05 German standard methods for the examination of water, waste water and sludge; anions (Group D); photometric determination of chromium(VI) using 1,5-diphenylcarbonohydrazide (D 24)
- DIN EN 12472:2009-09 Method for the simulation of wear and corrosion for the detection of nickel release from coated items; German version EN 12472:2005+A1:2009
- DIN EN 1811:2015-10: Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin; German version EN 1811:2011+A1:2015
- DIN EN ISO 17070:2015-05 Leather - Chemical tests - Determination of tetrachlorophenol-, trichlorophenol-, dichlorophenol-, monochlorophenol-isomers and pentachlorophenol content (ISO 17070:2015); German version EN ISO 17070:2015
- DIN EN ISO 18856:2005-11 Water quality - Determination of selected phthalates using gas chromatography/mass spectrometry (ISO 18856:2004); German version EN ISO 18856:2005
- DIN EN 14602:2012-10 Footwear - Test methods for the assessment of ecological criteria; German version EN 14602:2012
- DIN EN ISO/IEC 17025:2017-02 General requirements for the competence of testing and calibration laboratories (ISO/IEC DIS 17025:2016); German and English version prEN ISO/IEC 17025:2016
- DIN EN ISO 17353:2005-11 Water quality - Determination of selected organotin compounds - Gas chromatographic method (ISO 17353:2004); German version EN ISO 17353:2005

- DIN EN ISO 14362-1:2017-05 Textiles - Methods for determination of certain aromatic amines derived from azo colourants - Part 1: Detection of the use of certain azo colourants accessible with and without extracting the fibres (ISO 14362-1:2017); German version EN ISO 14362-1:2017
- DIN EN ISO 14362-3:2017-05 Textiles - Methods for determination of certain aromatic amines derived from azo colourants - Part 3: Detection of the use of certain azo colourants, which may release 4-aminoazobenzene (ISO 14362-3:2017); German version EN ISO 14362-3:2017
- DIN 54231:2005-11 Textiles - Detection of disperse dyestuffs
- DIN 54232:2010-08 Textiles - Determination of the content of bonds based on chlorobenzene and chlorotoluene
- DIN EN ISO 6330:2013-02 Textiles - Domestic washing and drying procedures for textile testing (ISO 6330:2012); German version EN ISO 6330:2012
- DIN EN ISO 5077:2008-04 Textiles - Determination of dimensional change in washing and drying (ISO 5077:2007); German version EN ISO 5077:2008
- ISO 105-A03 Technical Corrigendum 2:2005-10 Textiles - Tests for colour fastness - Part A03: Grey scale for assessing staining; correction 2
- DIN EN ISO 105-C06:2010-08 Textiles - Tests for colour fastness - Part C06: Colour fastness to domestic and commercial laundering (ISO 105-C06:2010); German version EN ISO 105-C06:2010
- DIN EN ISO 105-E04:2013-08 Textiles - Tests for colour fastness - Part E04: Colour fastness to perspiration (ISO 105-E04:2013); German version EN ISO 105-E04:2013
- DIN EN ISO 105-X12:2016-11 Textiles - Tests for colour fastness - Part X12: Colour fastness to rubbing (ISO 105-X12:2016); German version EN ISO 105-X12:2016
- DIN EN ISO 105-B02:2014-11 Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:2014); German version EN ISO 105-B02:2014
- DIN 53160-1:2010-10 Determination of the colourfastness of articles for common use - Part 1: Test with artificial saliva
- DIN 53160-2:2010-10 Determination of the colourfastness of articles for common use - Part 2: Test with artificial sweat
- BVL B 82.10-1:2011-12 Analysis of commodity goods - Testing of coloured children's toys with respect to their resistance to saliva and perspiration (adoption of the German standard DIN 53160 with the same name, edition June 1974)

- DIN EN ISO 12945-1:2001-08 Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 1: Pilling box method (ISO 12945-1:2000); German version EN ISO 12945-1:2000
- DIN EN ISO 12945-2:2000-11 Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 2: Modified Martindale method (ISO 12945-2:2000); German version EN ISO 12945-2:2000
- DIN EN ISO 15797:2017-03 Textiles - Industrial washing and finishing procedures for testing of work wear (ISO/DIS 15797:2017); German and English version prEN ISO 15797:2017
- DIN EN ISO 4920:2012-12
Textile fabrics - Determination of resistance to surface wetting (spray test) (ISO 4920:2012); German version EN ISO 4920:2012
- DIN EN ISO 10528:1995-08 Textiles - Commercial laundering procedure for textile fabrics prior to flammability testing (ISO 10528:1995); German version EN ISO 10528:1995
- DIN EN ISO 12138:2017-02 Textiles - Domestic laundering procedures for textile fabrics prior to flammability testing (ISO/DIS 12138:2017); German and English version prEN ISO 12138:2017
- ISO 7768:2009-05 Textiles - Test method for assessing the smoothness appearance of fabrics after cleansing
- DIN EN ISO 3758:2013-12 Textiles - Care labelling code using symbols (ISO 3758:2012); German version EN ISO 3758:2012
- Regulation (EU) No. 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code

Appendix C Exemptions from requirement c), paragraph 3.6.1

Upon evaluation by the Federal Environmental Agency (Umweltbundesamt), further exemptions from requirement c) may be adopted in accordance with Paragraph 3.6.1, Letter f), provided that these are technologically non-substitutable substances and consumer safety continues to be guaranteed.

The following are exempt from regulation c):

- Fatty alcohol ethoxylates used as substitutes for alkylphenol ethoxylates (APEOs);
- Hydroxymethane sulfinic acid sodium salt used as a reducing agent for direct printing with vat dyes and as a discharge agent for white and coloured discharged printing;
- Octamethyl cyclotetrasiloxane as a residue in silicone-based softening agents.

The exemption for these substances only applies to their use in mixtures and if the percentage by mass of the substance in the mixture does not cause the mixture to be assigned the H phrases listed in Table 6 (Paragraph 3.6.1 of the Basic Award Criteria)

Also exempt from regulation c) are:

- Ammonia for use in pigment printing and coating, provided that low-emission formulas are used. This means that ammonia emissions must be less than 0.6 g NH₃/kg of product, based on an air/product ratio of 20 m³/kg of product. The emissions shall be calculated on the basis of Appendix D of the Basic Award Criteria.

Appendix D Calculation of the emissions to air in the textile finishing process

Substance emission factors are provided as part of the product information by manufacturers of textile auxiliaries.

The substance emission factor is defined as the amount of substance in grams that may be emitted under defined process conditions (curing time, temperature, substrate) by 1 kg of the textile auxiliary.

1 Calculation of the product-related emission factor from the substance emission factors:

$$WF_c = \Sigma(FA \times FK \times f_c)$$

THM: Textile auxiliary

WF_c: Product-related emission factor in g of total carbon per kg of textile material

FA: Liquor pickup in kg of liquor per kg of textile material

FK: Liquor concentration in g of textile auxiliary per kg of liquor

f_c: Total carbon substance emission factor in g of total carbon per gram of textile auxiliary

Calculation of the product-related emission factors of two formulas (by way of example):

Liquor	THM	FK [g/kg]	FA [kg/kg]	f _c [g/g]	FK x FA x f _c	WF _c [g/kg]
Formula 1	Fatty acid ester	20	0.65	0.0152	0.2	
	Polysiloxane	20	0.65	0.0052	0.07	
	Reactant crosslinking agent with catalyst	100	0.65	0.0009	0.06	
	Stearyl urea derivative with catalyst	20	0.65	0.0162	0.21	
Total 1						0.54
Formula 2	Softening agent	50	1	0.005	0.25	
	Crease-resistant finish, formaldehyde-free	12	1	0.010	0.12	
	Catalyst	12	1	0.008	0.1	
Total 2						0.47

2 Calculation of the product-related emission factor from the measured concentration:

The air/product ratio (LWV) in m³/kg is firstly calculated from the measured waste gas flow (V) (in m³/h) of all emission points of a thermal treatment unit and the product throughput (W) (in kg/h):

$$\mathbf{LWV = V/W}$$

If multiple thermal treatment units are connected to a waste gas cleaning plant, the weighted LWV is determined by dividing the total waste gas flow by the total product throughput.

$$\mathbf{WF_c = LWV \times \Sigma c_c}$$

WF_c: Product-related emission factor in g of total carbon per kg of textile material

LWV: Air/product ratio in m³ waste gas per kg of textile material

c_c: measured concentration in g of total carbon per m³ of waste gas

Appendix E Dyes and pigments that are not permitted according to Paragraphs 3.6.6.5 and 3.6.6.7

1 Azo dyes

Azo dyes that may cleave to any one of the following aromatic amines (according to Directive 2002/61/EC):

- 4-aminobiphenyl (92-67-1)
- benzidine (92-87-5)
- 4-chloro-o-toluidine (95-69-2)
- 2-naphtylamine (91-59-8)
- o-amino-azotoluene (97-56-3)
- 2-amino-4-nitrotoluene (99-55-8)
- p-chloroaniline (106-47-8)
- 2,4-diaminoanisol (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-chloro-aniline) (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).
- 2,4-xylylidine (95-68-1)
- 2,6-xylylidine (87-62-7)

Carcinogenic, mutagenic and reprotoxic dyes

(in accordance with Decision 2014/350/EU (EU Ecolabel for textile products):

- C.I. Basic Red 9 C.I. 42 500,
- C.I. Disperse Blue 1 C.I. 64 500,
- C.I. Acid Red 26 C.I. 16 150,
- C.I. Basic Violet 14 C.I. 42 510,
- C.I. Disperse Orange 11 C.I. 60 700,
- C.I. Direct Black 38 C.I. 30 235,
- C.I. Direct Blue 6 C.I. 22 610,
- C.I. Direct Red 28 C.I. 22 120,
- C.I. Disperse Yellow 3 C.I. 11 855.
- Disperse Yellow 23 C.I. 26 070
- Disperse Orange 149

- Basic Blue 26 (with $\geq 0.1\%$ Michler's ketone or base)
- Basic Green 4 (oxalate, chloride or free)
- Basic Violet 3 (with $\geq 0.1\%$ Michler's ketone or base)
- Pigment Red 104 C.I. 77 605
- Pigment Yellow 34 C.I. 77 603

Potentially sensitizing dyes

(in accordance with Decision 2014/350/EU (EU Ecolabel for textile products):

- C.I. Disperse Blue 1 C.I. 64 500,
- 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 Brown 1,
- 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. 11 132,
- C.I. Disperse Orange 76 (former designation 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 3 C.I. 11 855,
- C.I. Disperse Yellow 9 C.I. 10 375,
- C.I. Disperse Yellow 39,
- C.I. Disperse Yellow 49.

2 Phthalates

In accordance with Paragraph 3.6.6.5, it is not permitted to use the following phthalates in coated or printed materials or in flexible foams and accessories made of plastic:

- BBP (butylbenzylphthalate)
- DBP (dibutylphthalate)
- DEHP (di-ethylhexyl phthalate)
- DMEP (di-(2-ethylhexyl)phthalate)
- DIHP (di-C6-8-branched alkylphthalates, C7 rich)
- DHNUP (di-C7-11-branched and linear alkylphthalates)
- DCHP (di-cyclohexylphthalat), DHxP (di-hexylphthalate, branched and linear)
- DIBP (di-isobutylphthalate)
- DIDP (di-isodecylphthalate)
- DIHxP (di-iso-hexylphthalate)
- DINP (di-isononylphthalate)
- DHP (di-n-hexylphthalate)
- DNOP (di-n-octylphthalate)
- DPP (di-pentylphthalate (N-,iso-, or mixed))

3 Chlorinated benzenes and toluenes

In accordance with Paragraph 3.6.6.8, it is not permitted to use the following chlorinated benzenes and toluenes in dyed synthetic fibres:

- Chlorobenzenes
- Dichlorobenzenes
- Trichlorobenzenes
- Tetrachlorobenzenes
- Pentachlorobenzenes
- Hexachlorobenzenes
- Chlorotoluenes
- Dichlorotoluenes
- Trichlorotoluenes
- Tetrachlorotoluenes
- Pentachlorotoluene