

Nordic Ecolabelling for
Textiles, hides/skins and leather



Version **5.0** • date – date
Consultation draft

Content

1	Definitions	8
2	Brand Owner licence	9
3	Production licence	10
3.1	Description of product and production methods	10
3.2	Material limitations	12
3.3	Re-design of recycled textiles, hides/skins and leather	13
3.4	Fibre production	14
3.4.1	Cotton and other natural seed fibres of cellulose	15
3.4.2	Silk, flax (linen) and other bast fibres (hemp, jute and ramie)	17
3.4.3	Wool and other keratin fibres	18
3.4.4	Regenerated cellulose fibre	20
3.4.5	Synthetic fibre	22
3.4.6	Recycled fibres	24
3.4.7	Additives and fibre treatment	25
3.5	Chemicals used in textile production	26
3.5.1	General chemical requirements	26
3.5.2	Specific chemical requirements	28
3.6	Coatings, laminates and membranes	30
3.7	Specific chemical requirement for adhesives	30
3.8	Discharges from wet processes	30
3.9	Energy and water consumption	31
3.10	Fillings, stuffing materials and padding	32
3.11	Hides/skins and leather	35
3.12	Quality and performance requirements	39
3.12.1	Quality and performance requirements for textiles	39
3.12.2	Quality and performance requirements for hides/skins and leather	42
3.12.3	Recycling of textiles and fabrics	43
3.13	Packaging, storage and transport	43
3.14	Social and ethical requirements	45
3.15	Quality and regulatory requirements	46
4	Areas without requirements	47

Appendix 1 Analysis and test laboratories

Appendix 2 Azo dyes and Carcinogenic aromatic amines

039 Textiles, hides/skins and leather, 5.0, 16 March 2020

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

Addresses

In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Nordic Swan Ecolabel. These organisations/companies operate the Nordic Ecolabelling system on behalf of their own country's government. For more information, see the websites:

Denmark

Ecolabelling Denmark
Danish Standards Foundation
Göteborg Plads 1, DK-2150 Nordhavn
Fischersgade 56, DK-9670 Løgstør
Tel: +45 72 300 450
info@ecolabel.dk
www.ecolabel.dk

Iceland

Ecolabelling Iceland
Norræn Umhverfismerking
á Íslandi
Suðurlandsbraut 24
IS-108 Reykjavík
Tel: +354 591 20 00
ust@ust.is
www.svanurinn.is

This document may only be copied in its entirety and without any type of change. It may be quoted from provided that Nordic Ecolabelling is stated as the source.

Finland

Ecolabelling Finland
Urho Kekkosen katu 4-6 E
FI-00100 Helsinki
Tel: +358 9 61 22 50 00
joutsen@ecolabel.fi
www.ecolabel.fi

Norway

Ecolabelling Norway
Henrik Ibsens gate 20
NO-0255 Oslo
Tel: +47 24 14 46 00
info@svanemarket.no
www.svanemarket.no

Sweden

Ecolabelling Sweden
Box 38114
SE-100 64 Stockholm
Tel: +46 8 55 55 24 00
info@svanen.se
www.svanen.se

What are Nordic Swan Ecolabelled textiles, hides/skins and leather?

The description of what characterizes Nordic Swan Ecolabelled textiles, skins and leather is divided into 2 product areas:

- Textiles
- Skins and leather

Nordic Swan Ecolabelled textiles

Nordic Ecolabelled textiles have reduced environmental impact throughout the lifecycle of the textile and the textile producer must ensure that production complies with UN human rights and relevant International Labour Conventions.

The different fibres in the fabric - depending on the type of fibres – must be either organic, recycled or bio-based. If the fibres are bio-based, they shall be produced with reduced environmental impact.

In order to protect the environment and the user of the textile, a long list of prohibited chemicals regulate the textile production. These are chemicals which are harmful to the environment and human health.

Textiles with the Nordic Swan Ecolabel give the opportunity for a long lifetime and the quality is therefore tested and documented.

Recycled textile materials can be used in the Nordic Swan Ecolabelled product with some limitations.

Several of the Nordic Swan Ecolabel requirements support that the textile can go into new resource loops after use. In this way, the requirements help to stimulate a circular economy, save resources and reduce the amount of waste. This is due to the requirements for either recycled or bio-based raw materials, strict control of the chemicals included in the textile, quality testing of the finished textile and requirements that prohibit the use of plastic and metal applications for decorating. Unsold Nordic Swan Ecolabelled textiles must not be burnt or sent to landfill.

Nordic Swan Ecolabelled products of skins and leather

Nordic Swan Ecolabelled skins and leather have reduced environmental impact throughout the lifecycle and the manufacturer must ensure that production complies with UN human rights and relevant International Labour Conventions.

Only skins and leather which are residuals or by-products from meat, fish, milk or wool production can be Nordic Swan Ecolabelled.

In order to protect the environment and the user of the textile, a long list of prohibited chemicals regulate the textile production. These are chemicals which are harmful to the environment and human health.

Skins and leather with the Nordic Swan Ecolabel give the opportunity for a long lifetime and the quality is therefore tested and documented.

Recycled skins and leather materials can be used in the Nordic Swan Ecolabelled product with some limitations.

Several of the Nordic Swan Ecolabel requirements support that skins and leather can go into new resource loops after use. In this way, the requirements help to stimulate a circular economy, saving resources and reducing the amount of waste. This is due to, that only residuals or by-products can be used as raw materials for skins and leather, strict control of the chemicals included in the textile, quality testing of the finished leather, requirements that prohibit the use of plastic and metal applications for decorating. Unsold Nordic Swan Ecolabelled skins and leather products must not be burnt or sent to landfill.

Why choose the Nordic Swan Ecolabel?

- Brand owners with a brand owner licence may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Swan Ecolabel is a simple way of communicating environmental work and commitment to customers.
- The Nordic Swan Ecolabel clarifies the most important environmental impacts and thus shows how a company can cut emissions, resource consumption and waste management.
- Environmentally suitable operations prepare the brand owner for future environmental legislation.
- Nordic Ecolabelling can be seen as providing a business with guidance on the work of environmental improvements.
- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

What can carry the Nordic Swan Ecolabel?

The criteria cover products made from textiles, hides/skins and leather, or a combination of the above. In this context, textiles, hides/skins and leather means:

- Products for both private and professional use.
- Fibres*, yarn, fabric and finished textile products.
- Apparel and accessories, for example trousers, shirts, jackets, workwear, uniforms, underwear, handkerchiefs, scarves, purses, wallets and bags.
- Furnishing fabrics (for both private and professional use), such as towels, bedding, curtains, tablecloths, rugs, pillows, duvets and upholstery textiles, plus textiles for use in the furnishing of cars/trains/aircraft/boats.
- Durable non-woven textiles that are to be used for apparel and accessories or in interior furnishings as described above. Durable non-woven products are those that can be used multiple times and washed.

- Hide and leather products (in combination with textile), such as jackets, trousers or bags, and hides/skins and leather as raw materials for clothing or home furnishings (including for cars/trains/aircraft/boats), from the following species of animal: sheep, goat, cow, horse, pig, elk, deer, reindeer or fish.

** Only the following fibre types can be certified with the Nordic Swan Ecolabel as a certified fibre and only if the relevant requirements of the criteria are met: Organic cotton fibres, wool and other creatine fibres (either sheep, camel, alpaca or goat), regenerated cellulose, flax (linen), silk, bamboo, sisal and other bast fibres.*

The following products and materials cannot be ecolabelled in accordance with the criteria for textiles, hides/skins and leather:

- Mineral fibre, glass fibre, metal fibre, carbon fibre and other inorganic fibres.
- Products or materials that are treated with flame retardants. This also applies to flame retardants that are integrated in the product or material.
- Wall coverings, such as textile wallpapers.
- Advertising materials, banners, roll-ups.
- Disposable products. 'Disposable products' refers to products that cannot be washed/cleaned or reused.
- Products containing electronic components.
- Products containing perfume or other fragrances.

Products that can be ecolabelled in accordance with other Nordic Swan Ecolabelling criteria are not covered by the textile criteria. Examples include:

- Disposable products made from non-woven material that cannot be washed or reused, for example paper towels (criteria for tissue paper).
- Microfibre cleaning cloths (criteria for supplies for microfibre based cleaning).
- Disposable products such as cotton pads for personal care (criteria for sanitary products).
- Wet wipes (criteria for cosmetic products).
- Baby products with textiles such as baby carriers, carry cots, and nursing pillows (criteria for baby products with textiles).
- Floor coverings, such as wall-to-wall carpets (criteria for floor coverings).
- Textile products that form part of a piece of furniture, e.g. sofa cushions, mattresses and floor cushions (beanbags) (criteria for furniture and fitments). Pillows that are part of a combined furniture licence, for example with beds or mattresses, and have the same type of filling, can be ecolabelled according to the criteria for furniture and fitments.
- Microfibre cloths (criteria for supplies for microfibre based cleaning).
- Textile banners and roll-ups with print on them (criteria for printing companies, printed matter, envelopes and other converted paper products).
- Toys/soft toys (criteria for toys).
- Shoes (covered by the EU Ecolabel's criteria for footwear).

How to apply

Application and costs

For information about the application process and fees for this product group, please refer to the respective national web site. For addresses see first in this document.

What is required?

The application must consist of an application form/web form and documentation showing that the requirements are fulfilled.

Each requirement is marked with the letter O (obligatory requirement) and a number. All requirements must be fulfilled to be awarded a licence.

The text describes how the applicant shall demonstrate fulfilment of each requirement. There are also icons in the text to make this clearer. These icons are:

☒ Enclose

🔍 Requirement checked on site

All information submitted to Nordic Ecolabelling is treated confidentially. Suppliers can send documentation directly to Nordic Ecolabelling, and this will also be treated confidentially.

Licence validity

The Nordic Swan Ecolabel licence is valid providing the criteria are fulfilled and until the criteria expire. The validity period of the criteria may be extended or adjusted, in which case the licence is automatically extended, and the licensee informed.

Revised criteria shall be published at least one year prior to the expiry of the present criteria. The licensee is then offered the opportunity to renew their licence.

On-site inspection

In connection with handling of the application, Nordic Ecolabelling normally performs an on-site inspection to ensure adherence to the requirements. For such an inspection, data used for calculations, original copies of submitted certificates, test records, purchase statistics, and similar documents that support the application must be available for examination.

Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See first in this document for addresses. Further information and assistance (such as calculation sheets or electronic application help) may be available. Visit the relevant national website for further information.

1 Definitions

Terms

Definition

Brand owner licence

A mandatory license for companies that sells Nordic Swan Ecolabelled products under its own brand or in other ways want to bring Nordic Swan Ecolabelled products on the market. The product may be e.g. fibers, yarns, fabric or finished goods. A Brand owner license will always draw on one or more production licenses

Ingoing substances

All substances, whatever their concentration, in a used chemical (e.g. pigment or bleaching agent) or blend of chemicals (e.g. adhesive, surface treatment), including additives (e.g. preservatives and stabilisers). Known products released from ingoing substances (e.g. formaldehyde, arylamine and in-situ generated preservatives) are also considered to be constituent.

Impurities

Residual substances from production, including raw material production, that are present in a used chemical or blend of chemicals in concentrations of ≤ 100.0 ppm (≤ 0.01000 wt%, ≤ 100.0 mg/kg).

Examples of impurities are residues of the following: reagents including monomers, catalysts, by-products, “scavengers” (i.e. chemicals used to eliminate/minimise undesirable substances), cleaning agents for production equipment, and carry-over from other/earlier production lines.

Laminate

A laminated fabric is a two (or more) layer construction with a polymer film bonded to a fabric. Laminated fabrics are used in rainwear, automotive, and other applications

Production licence

The license where all the environmental requirements are documented. A production license does not give the right to bring physical products with the Nordic Swan Ecolabel on the market. A production license typically be at the end manufacturer that delivers to the brand owner - and will be linked to documentation of a variety of processes and physical flows. A brand owner who also produces the textile, will always have both a brand owner and a production license, while a brand owner, who uses a third party for the production, will be able to choose either to use the manufacturers production license or to own the production license themselves.

Textile

Material made from weaving, knitting, crocheting, thread lacing, or made from felted fibres.

Textile element

“Textile element” is the designation of a unique textile element on the final product. “Textile element” describes the finished textile. Various textile elements have different supply chains or are produced differently, but may be of the same fibre type.

Textiles which are only distinguished by dyeing or printing by the same supplier are considered to be the same textile element. For example, polyester from supplier 1 is one textile element, and polyester from supplier 2 will thus be another textile element. Two different types of polyester from the same supplier will also be separate textile elements.

Fibre type

Types of textile fibre such as cotton, wool, polyester and viscose.

Recycled material

Recycled material is defined in the requirement according to ISO 14021, which applies the following two categories:

“Pre-consumer/commercial” is defined as material that is recovered from the waste stream during a manufacturing process. Materials that are reworked or reground, or waste that has been produced in a process, and can be recycled within the same manufacturing process that generated it, are not considered to be pre-consumer recovered material.

Nordic Ecolabelling considers reworked, reground or scrap material that cannot be recycled directly in the same process, but requires reprocessing (e.g. in the form of sorting, re-melting and granulating) before it can be recycled, to be pre-consumer/commercial material. This is irrespective of whether the processing is done in-house or externally.

“Post-consumer/commercial” is defined as material generated by households or commercial, industrial or institutional facilities in their role as end-users of a product that can no longer be used for its intended purpose. This includes materials from the distribution chain.

Recycled fibres

This covers both mechanical and chemical recycling of fibres and materials.

2 Brand Owner licence

A Brand Owner that, sells Nordic Swan Ecolabelled products under its own brand, or in other ways places a Nordic Swan Ecolabelled product on the market, shall meet the following requirement in order to obtain their own Brand Owner licence.

01 Traceability of the Nordic Swan Ecolabelled product

The Brand Owner is responsible for ensuring that a Nordic Swan Ecolabelled product can be traced back to a production licence (see section 1 Definitions).

The Brand Owner must provide the following information about the Nordic Swan Ecolabelled products:

- Whether the products are sold to consumers (B2C) and/or to professionals (B2B).

- Which textile production licence are being used for each Nordic Swan Ecolabelled products.
- The Brand Owner's trade names as it appears on the products.

*The trade name must be identical to the trade names present on the Nordic Swan Ecolabelled products that are sold for retail or B2B. A Nordic Swan Ecolabelled product must not have the same trade name as a **non**-Nordic Swan Ecolabelled product from the Brand Owner.*

- ☒ The Brand Owner must submit the information specified in the requirement.
- ☒ Submit a description of the procedure of the brand owner, which shows how it is ensure that the information held by Nordic Ecolabelling is kept updated for the entire period of the licence.

O2 Unsold textiles

Unsold textiles and defect textile from productions must not be sent for incineration or dumped in landfill.

The brand owner must inform Nordic Ecolabelling and state on their website how they deal with unsold textiles.

- ☒ Description of how unsold textiles are dealt with.
- ☒ Link to page on brand owner's website that has information on how unsold textiles are dealt with.

O3 Information on reduced washing

For washable garments (except underwear, socks and stockings) the following text must be stated to the consumer: "Reduce number of washes - and help save energy and reduce climate impact".

Equivalent wording shall be approved by Nordic Ecolabelling.

- ☒ Submit photo of hang tag or care label on a product as well as routine for how this is done.

O4 Primary textile packaging

If the brand owner is responsible for the primary textile packaging* the following requirements shall be documented by the brand owner: O84, O85, O86 and O87.

** Primary packaging is defined here as packaging from the manufacturer that accompanies the product all the way to the consumer. Delivery packaging used by online retailers is not considered to be primary packaging.*

- ☒ Declaration from the brand owner describing who is responsible for the primary packaging of the product.

3 Production licence

All the following requirements are included in the production licence.

3.1 Description of product and production methods

This section contains the general requirements for the products and is where the Nordic Swan Ecolabelled products and their production methods are to be described. Requirement limits concerning sewing thread, care labels, elastic and small textile elements are also outlined here.

O5 Product description

Describe the products included in the production licence by providing the following information:

- Describe whether the product type on the license is: fibre, yarn, fabric or finished textile product. For finished textile products specify the type (e.g. clothing for babies, children and adults, underwear, sportswear, swimwear, rainwear, home furnishings or professional textiles such as workwear, bed linen etc.).
- State the manufacturer's trade name on the products.

☒ Information requested in the requirement.

O6 Material composition

The applicant must provide the information below for each product with a unique trade name.

An overview of all the materials present in the product (Bill of Materials), stating:

- All fabrics, specifying their designation/name and fibre composition as a percentage by weight (wt %).
- The materials in any membranes/coatings.
- Any details/accessories (e.g. zippers, buttons, Velcro strips, etc.), with a statement of the material type and weight.
- Any fillings and stuffing materials expressed as a percentage by weight.
- Information must be provided on whether textile fibres and plastic materials are recycled and/or biobased.
- If the fabric is recycled, this must be stated.

☒ Schematic overview containing the above information for all products covered by the production licence. The overview must clearly state which materials are present in the individual product.

O7 Production chain

The following information about the production chain must be stated, in overview form, for each product*:

- Description of **all** the production methods/treatment techniques for the whole production of the product, including production by suppliers, as far back as the raw material suppliers**, preferably presented in a flow chart.
- Designation/name of the fibres, yarns and fabrics, which matches the designation/name stated in requirement O6. It must be clear which actors produce and process the various materials.
- Information on all the actors in the production chain, including suppliers and agents, is to be provided: company name, production location, contact person and the production processes used.

** Products with an identical production chain can be grouped together. It must however be made clear which trade names are gathered into groups.*

*** Raw material supplier means, for example, a supplier of textile fibres or a supplier of feathers for filling material.*

☒ Schematic overview (e.g. flow chart) presenting the above points.

3.2 Material limitations

O8 Material limits

The criteria contain the following material limitations and triviality limits:

- Sewing thread and embroidery thread are not covered by the requirements.
- Coatings, membranes and laminates must not totally exceed 20% by weight of the finished product. All the coatings, membranes and laminates used are covered by requirements in section 3.5.
- Zippers, buttons, reflectors, elastic bands, velcro and other details (plastic or metal) must not totally exceed 10% by weight of the finished product. For metal in belt buckles, up to 25% by weight of the belt can be allowed. Requirements concerning zippers, buttons, reflectors, elastic bands, velcro and other details are stated in requirement O12. Underwear and sportswear are not subject to a maximum limit for elastic bands and elastane as a fibre, see requirement O10.
- Fibre types, hides/skins and leather that are subject to requirements in the criteria and that jointly amount to no more than 5% by weight of the product are exempt from the fibre requirements in section 3.4 and the requirements concerning hides/skins and leather.

- ☒ Description showing compliance with the material limits in the requirement. The material overview from requirement O6 may be used as documentation.

O9 Smaller textile elements

Smaller textile elements (e.g. pocket linings) that are individually present to a maximum of 5% by weight and in total to a maximum of 10% by weight in the finished product may be exempted from the requirements concerning fibre and textile production, if one of the following conditions is met:

- the textile element has an EU-Ecolabel certificate or
- the textile element has a GOTS certificate or
- the textile element has an Oeko-Tex 100 class I certificate or can be documented as meeting the requirement level for Oeko-Tex 100 class I in test reports. In addition, fluorinated substances (fluorinated organic compounds) must not be used.

Alternatively, the requirements concerning fibre and textile production are to be fulfilled and documented.

- ☒ Certificate relating to the requirements for the textile elements that invoke this exemption.
- ☒ For Oeko-Tex 100 certified textiles: an additional statement regarding fluorinated organic compounds.

O10 Elastane and elastic bands in underwear and sportswear

Elastane and elastic bands that are included in underwear or sportswear up to a total maximum of 25% of the product's weight may be exempted from the requirements for fibre and textile production, if one of the following conditions is met:

- the elastic band has a GOTS certificate for accessories or Oeko-Tex 100 class I certification
- and
- the elastane fibre has Oeko-Tex 100 class I certification.

- ☒ Certificate showing that the requirement is fulfilled.

O11 Info labels

Information printed directly on the textile product itself must meet requirements concerning printing chemicals and dyes in section 3.5.

There are no requirements relating to fabric info labels sewn into textiles (care label, brand name label and size label).

- ☒ State which labels are used on the product.

O12 Zippers, buttons, velcro, reflectors and other details

Details/accessories* with no practical function such as sequins, rivets, glitter and so on are not permitted.

Rivets may, however, be used on denim to attach pockets, as they have a reinforcing function in this situation, if the material meets the requirements below.

Metal or plastic details/accessories that have a function may be used (e.g. buttons, press studs, zippers, buckles and reflectors), if the material meets the requirements below.

Metal details

The following limit values apply for metal details:

- Lead (Pb) <90 mg/kg (Digested sample, Detection GC-ICP-MS)
- Cadmium (Cd): <40 mg/kg (Digested sample, Detection GC-ICP-MS)
- Nickel (Ni): Migration limit <0.5 micrograms/cm²/week (Test methods EN 12472 and EN 1811 or EN 16128:2001).

Plast- and rubber details:

Plastic and polymer elements such as tape for seams must not be made from PVC or PVDC or contain phthalates.

* All parts of the product that are not fabric, sewing thread, stuffing or skin and leather are details.

- ☒ Metal: Test report for the metal material in question (e.g. buttons) showing fulfilment of the metal requirement. Alternatively, a GOTS or Oeko-Tex 100 class I certificate may be used as documentation for metal details.
- ☒ Plastic: Declaration from the manufacturer of the plastic material (e.g. button manufacturer) that the plastic meets the requirement.

3.3 Re-design of recycled textiles, hides/skins and leather

Nordic Ecolabelling wishes to promote the recycling of textiles, hides/skins and leather. However, to prevent the spread of substances that are harmful to health and the environment, the recycled textile, hide/skin and leather elements used must meet the requirements below. Other newly produced elements of the product and details such as buttons and zippers must meet the relevant requirements in the criteria.

If the recycled material or the finished product is subject to additional processing with chemical products (e.g. dyes, printing, finishing, etc.), the requirements in sections 3.5.1 and 3.5.2 regarding the relevant chemicals must be fulfilled and documented. Recycled textiles, hides/skins or leather that are not further processed using chemicals do not need to meet the requirements concerning chemicals used in textile, hide/skin and leather production.

The requirements regarding recycled fibres are described in the section on fibre production, since this section only addresses textile recycling.

O13 Recycled textiles, hides/skins, leather

Recycled textile, hide/skin and leather materials* may be used for the whole or part of the product. Due to the risk of contamination with harmful substances from the original use of the textile, recycled material from professional workwear for industry or materials previously used for cleaning may not be used.

Recycled materials must not contain plastisol print (e.g. PVC), for example in print, coatings or details.

The material must either

- originally be ecolabelled with the Nordic Swan Ecolabel, the EU-Ecolabel, GOTS or Bra Miljöval, or have Oeko-Tex 100 certification.

or

- only used for
 - furnishing fabrics such as rugs, tablecloths, blankets (not bed linen) and curtains
 - adult clothing for consumers, but not underwear
 - bags, purses, wallets and other adult accessories.

** Recycled textiles, hides/skins, leather and filler materials are defined here as post-consumer materials or pre-consumer, where it can be documented that the material is a residual material or waste from another business. Fabrics (not fabricated) are only counted as recycled textiles, if it can be documented that more than five years have elapsed since the fabric was originally produced. For a further definition, see ISO 14021.*

- ☒ **Originally labelled:** Documentation that the textile, hide/skin or leather was originally labelled with the ecolabels stated in the requirement or labelled with Oeko-Tex 100. This may be an original invoice or a label on the textile.
- ☒ **No labelling:** Documentation showing that the textile, hide/skin or leather being used is recycled. Also, description of the type of product in which the recycled textile, hide/skin leather will be used.
- ☒ Declaration that recycled material from professional workwear for industry has not been used, and that the material does not contain PVC, for example in print, coatings or details.

3.4 Fibre production

Nordic Ecolabelling sets requirements concerning the production of both natural fibres and synthetic fibres. Natural and synthetic fibres all impact on the environment in one way or another. Synthetic fibres, for example, uses fossil resources, while conventional cultivation of cotton involves high consumption of water and pesticides.

The criteria cover the most common fibre types in the textile industry, with the intention of promoting the variants of each individual fibre type with the best environmental profile. Nordic Ecolabelling also wishes to encourage the textile industry to work towards more sustainable textile production along the whole value chain. The approach here is therefore to focus on the fibre types that are most widely used and thus make a major contribution to the textile industry's environmental impact – in order to nudge them in a less environmentally harmful direction – and to promote new, less environmentally harmful, fibres. This makes it possible to steer even more textile production in a sustainable direction.

The fibres are usually spun. However, if the fabric is non-woven, for example as a substrate (e.g. for laminates, coatings and membranes), the fibre raw materials must also meet the requirements associated with the relevant fibre in this section.

Fibers must comply with relevant requirements for the type of fiber in the criteria, regardless of whether they apply for Nordic Ecolabelling of fiber, yarn, fabric or finished textile product. The following fiber types can be Nordic Ecolabelled at fiber level: Organic cotton fibers, wool and other creature fibers (either sheep, camel, alpaca or goat), regenerated cellulose, flax (flax), silk, bamboo, sisal and other bast fibers.

Natural fibre

Vegetable fibres are subject to specific requirements concerning the cultivation of cotton and other cellulose seed fibres, as well as flax and other bast fibres. For animal fibres such as wool and other keratin fibres, requirements are set for the level of residues of pesticides against parasites in wool, as well as COD discharges in wastewater.

Synthetic fibre

Synthetic fibres are subject to the requirement that either they must be bio-based or recycled materials are used in production. For bio-based fibres, there are also requirements stipulating the types of raw materials that may be used and that they must not be cultivated using genetically modified raw materials. Recycled fibres are required to have been tested for content of harmful chemicals. For regenerated cellulose fibre, requirements are set regarding the production processes. Here, the fibre production must involve no discharge to wastewater, and sourcing of a high share of fibres from sustainable forestry or as recycled.

Fibre from recycled material

Fibre from recycled material/fibres* is exempted from the requirement for virgin fibre but, instead of meeting the requirements for the type of fibre concerned, the applicant must document that the material or fibre is purchased as recycled, and document requirement O28 on testing for content of undesirable substances. There are no requirements concerning chemicals used in the actual recycling processes. However, as with other chemicals added, for example during dyeing or spinning, there are requirements concerning the chemicals used in the treatment of the fibres in requirement O29 and the requirements for chemicals used in all the processes in the textile production, as set out in section 3.5.

* See definition of recycled material and fibre in section 1 Definitions.

Fibre not covered by the criteria

Textile fibres that are not subject to any fibre requirements in these criteria may account for no more than 5% by weight of the individual fabric.

3.4.1 Cotton and other natural seed fibres of cellulose

O14 Cotton fibres

Cotton and other natural seed fibres of cellulose (including kapok) must be organically cultivated* or recycled**.

The following product types for professional use can be exempted from the requirement of 100% organic cotton:

- Clothing (uniforms and workwear) and
- Bed linen, towels, bathrobes, tablecloths, tea towels, cloths and napkins for e.g. hotels, hospitals and other institutions.

If using the exception, the cotton fibres shall not come from GMO (genetically modified organisms)*** and shall be cultivated with IPM (Integrated Pest Management) according to one of the following standards:

- BCI (Better Cotton Initiative)
- CmiA (Cotton made in Africa)
- FairTrade for cotton

The proportions of the different types of certified cotton must add up to 100% and all documentation shall reference the Control Body or certifier of the different forms of cotton.

Documentation that BCI cotton does not contain material from GMO shall be documented in accordance with test method IWA 32:2019 or equivalent for each batch of BCI cotton that is purchased.

Cotton certified via CmiA and FairTrade does not need to be tested, as long as these schemes exclude the use of genetically modified cotton.

Cotton fibre, cotton yarn and cotton fabrics cannot be Nordic Swan Ecolabelled if using the exception. Other relevant products beyond those stated above may be included on request, following assessment by Nordic Ecolabelling.

** **Organic cotton** means cotton fibre that is certified as organic or transitioning to organic according to a standard approved in the IFOAM Family of Standards, such as Regulation (EU) 2018/848, USDA National Organic Program (NOP), APEDA's National Programme for Organic Production (NPOP), China Organic Standard GB/T19630. Also approved are GOTS and DEMETER and certification as "transitioning to organic cultivation". The certification body must have the accreditation required for the standard, such as ISO 17065, NOP or IFOAM.*

*** **Recycled fibres or materials:** Pre-consumer or post-consumer recycled raw materials, see the definition in the ISO 14021 standard. Both mechanically and chemically recycled fibres are included. See the definitions in section 1 for more details.*

**** Genetically modified organisms are defined in EU Directive 2001/18*

☒ **Organic cotton:** Valid certificate showing that the cotton in the Nordic Swan Ecolabelled product was organically cultivated in line with the standards in the requirement. If the supplier is the holder of GOTS certification, the requirement must be documented with a transaction certificate showing that the goods supplied are GOTS certified. For BCI, there must be documentation that the purchased cotton can be traced back to BCI farmers.

☒ **Recycled fibres:** Fulfilment of the requirement is documented for recycled fibre with either a and/or b below:

- a) Certificate showing that the raw material is 100% recycled (post and / or pre-consumer) with Global Recycled Standard certificate 4.0 (or later versions), or other equivalent certification approved by Nordic Ecolabelling.
- b) Present documentation demonstrating that the recycled fibre was purchased as 100% recycled (post and / or pre-consumer) and state the supplier.

- ☒ **Cotton fibres covered by the exception:** Documentation showing that the cotton is grown within one of the three IPM standards BCI, CmiA or FairTrade Cotton. All documentation shall reference the Control Body or certifier of the different forms of cotton. and be documented
 - on an annual basis for purchased cotton with transaction records and / or invoices
 - or, on a final product basis (by weight) measured at spinning and / or fabrication.
- ☒ Test report showing that the BCI cotton does not contain material from commonly known varieties of genetically modified cotton and procedure demonstrating that all purchased batches are tested.

3.4.2 Silk, flax (linen) and other bast fibres (hemp, jute and ramie)

O15 Silk

Silk fibre that makes up more than 30% by weight of the fabric must either be certified as “organic” * or be recycled**.

** **Organic silk:** silk that is certified as organic or transitioning to organic according to a standard approved in the IFOAM Family of Standards, such as Regulation (EU) 2018/848, USDA National Organic Program (NOP), APEDA's National Programme for Organic Production (NPOP), China Organic Standard GB/T19630. Also approved are GOTS and DEMETER and certification as “transitioning to organic cultivation”. The certification body must have the accreditation required for the standard, such as ISO 17065, NOP or IFOAM.*

*** **Recycled fibres:** Pre-consumer or post-consumer recycled raw materials, see the definition in the ISO 14021 standard. Both mechanically and chemically recycled fibres are included. See the definitions in section 1 for more details.*

- ☒ Valid certificate showing that the silk in the Nordic Swan Ecolabelled product was organically cultivated in line with the standards in the requirement. If the supplier is the holder of GOTS certification, the requirement must be documented with a transaction certificate showing that the goods supplied are GOTS certified.
- ☒ Fulfilment of the requirement is documented for recycled fibre with either a or b below:
 - a) Global Recycled Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
 - b) Present documentation demonstrating that the recycled fibre was purchased as recycled and state the supplier.

O16 Flax (linen) and other bast fibres

Flax (linen) and other bast fibres (e.g. hemp, jute and ramie) may only be cultivated using pesticides permitted in Regulation (EC) No 1107/2009.

- ☒ Declaration that only pesticides approved in Regulation (EC) No 1107/2009 have been used.

O17 Water retting of flax (linen) and other bast fibres

Production of flax (linen) and other bast fibres (e.g. hemp, jute and ramie) using water retting is only allowed if the wastewater from the retting ponds is treated so as to reduce the chemical oxygen demand (COD) or the total organic carbon (TOC) by at least:

- 75% for hemp fibres
- 95% for flax (linen) and other bast fibres

Test method: Test in accordance with ISO 6060.

Measurement of BOD, PCOD or TOC may also be used if a correlation to COD is evident.

- ☒ Test report from the producer of the flax (linen)/bast fibre, showing that the requirement is fulfilled or
- ☒ Proof of a valid EU Ecolabel licence in line with the Commission Decision of July 2014.

3.4.3 Wool and other keratin fibres

O18 Wool and other keratin fibres

Any wool and other keratin fibres used must originate from sheep, camels, alpaca or goats, and must be one of the following:

1. certified organic wool*
 2. recycled wool**
- or
3. conventional wool with documentation that the requirement below concerning pesticide content in the raw wool is fulfilled.

Pesticide content in conventional wool:

- The total content of the following substances may not exceed 0.5 ppm: γ-hexachlorocyclohexane (lindane), α-hexachlorocyclohexane, β-hexachlorocyclohexane, δ-hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT and p,p'-DDD, cypermethrin, deltamethrin, fenvalerate, cyhalothrin and flumethrin.
- The total content of the following substances may not exceed 2 ppm: diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyrifos, fenchlorphos, dicyclanil, diflubenzuron and triflumuron.
- The requirement to test for pesticide residues does not apply if documentation can show which farmers produced at least 75% by weight of the wool or keratin fibres, and those farmers can confirm that the substances named in the requirement have not been used in the areas or on the animals in question.

Test method: The tests must be performed in accordance with IWTO Draft Test Method 59: Method for the Determination of Chemical Residues on Greasy Wool or equivalent.

The analysis must be performed on raw wool before wet processing and the test report must be submitted with the application. Thereafter, the applicant must have a procedure in place for annual testing in line with the requirement and for ensuring compliance with the requirement. Nordic Ecolabelling must be informed if the requirement is not fulfilled.

*** Definition of organic wool:** wool fibre that is certified as organic or transitioning to organic according to a standard approved in the IFOAM Family of Standards, such as Regulation (EU) 2018/848, USDA National Organic Program (NOP), APEDA's National Programme for Organic Production (NPOP), China Organic Standard GB/T19630. Also approved are GOTS and DEMETER and certification as "transitioning to organic cultivation".

The certification body must have the accreditation required for the standard, such as ISO 17065, NOP or IFOAM.

**** Definition of recycled wool:** *Pre-consumer or post-consumer recycled raw materials, see the definition in the ISO 14021 standard. Both mechanically and chemically recycled fibres are included. See the definitions in section 1 for more details.*

- ☒ **Organic wool:** Valid certificate showing that the wool in the Nordic Swan Ecolabelled product was organically cultivated in line with the standards in the requirement. If the supplier is the holder of GOTS certification, the requirement must be documented with a transaction certificate showing that the goods supplied are GOTS certified.
- ☒ **Recycled fibre:** Fulfilment of the requirement is documented for **recycled fibre** with either a or b below:
 - a) Global Recycled Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
 - b) Present documentation demonstrating that the recycled fibre was purchased as recycled and state the supplier.
- ☒ **Conventional wool:** Declaration from the wool supplier that no mulesing has been used.
- ☒ **Conventional wool:** In addition, a test report showing that the pesticide requirement has been fulfilled, plus a written procedure showing how an annual test is performed in line with the pesticide requirement, along with annual in-house checks of compliance with the requirement. Test results are to be archived and kept available for inspection by Nordic Ecolabelling. An alternative to the pesticide test is a confirmation from the farmers that the stated substances are not used, plus an overview of the proportion of wool concerned.

O19 Scouring agents

Scouring agents that are used in the washing of raw wool must be either readily aerobically biodegradable or inherently aerobically biodegradable in accordance with test method: OECD 301 A-F (60% degradability), OECD 310 (60% degradability), OECD 302 A-C (70% degradability) or equivalent test methods.

- ☒ Declaration from the chemical supplier and safety data sheet for the scouring agents used and/or OECD or ISO test results showing compliance with the requirement.

O20 COD emissions from wool scouring plants

Emissions of COD from wool scouring plants must not exceed (expressed as a six month average):

- 45 g/kg for fine wool (merino wool or wool fibre that is 25 microns or thinner)
- 25 g/kg for coarse wool

Wastewater that is sent to municipal or other regional treatment works is exempted.

Measurement of PCOD, TOC or BOD may also be used, if a correlation to COD is evident.

Test method: Test according to ISO 6060.

- ☒ Test report from the wool scouring plant showing that the requirement is fulfilled. Alternatively, a valid GOTS or EU Ecolabel certificate may be used as documentation.

O21 pH value and temperature of wastewater from wool scouring

The pH value of the wastewater released to the surface water must be 6-9 (unless the pH value in the recipient lies outside this interval), and the temperature must be lower than 40°C (unless the temperature in the recipient is higher).

- ☒ Test reports from the wool scouring plant showing measurements of the wastewater's pH and temperature. Alternatively, a valid GOTS certificate may be used as documentation.

O22 Ban on mulesing

Surgical mulesing and mulesing performed using liquid nitrogen are not permitted on merino sheep.

- ☒ Declaration from the merino wool producer, stating that no mulesing has taken place.

3.4.4 Regenerated cellulose fibre**O23 Regenerated cellulose fibre (viscose), raw material**

Regenerated cellulose fibre must be based on:

- wood, bamboo fibre, cotton linters
- or
- recycled cotton or viscose fibre

Wood fibre and bamboo shall meet the following requirements:

- Virgin fibres: Species of trees on the Nordic Ecolabel list of protected tree species (www.nordicecolabel.org/wood/) may not be used in regenerated cellulose fibre/pulp. The requirement only applies to virgin wood fibre and therefore does not apply to fibre defined as recycled material*.
- Virgin fibres: The producer of the regenerated fibre or the producer of the dissolving pulp must state the name (species) of the wood and bamboo raw material used in production.
- The producer of the regenerated fibre or the producer of the dissolving pulp must hold chain of custody certification from either FSC or PEFC.
- **On an annual basis:**

50% of the fibre raw material used as cellulose fibre/in the dissolving pulp shall be certified as sustainably forested under the FSC or PEFC schemes. The remaining percentage of fibre raw material shall be covered by the FSC/PEFC compliance schemes (FSC Controlled Wood/PEFC Controlled Sources)

or

At least 75% of the regenerated fibre in the dissolving pulp must be recycled material*

or

be a combination of certified fibre raw material and recycled material, calculated using the following formula:

Required share of fibre raw material from certified forestry in the pulp (Y):

$$Y (\%) \geq 50 - 0.67 \times$$

where x = proportion of recycled material.

The requirement shall be documented as raw material purchased on an annual basis (volume or weight) by the producer of the regenerated fibre or the producer of the dissolving pulp.

If several pulps are mixed, the certification percentage must be met for the final pulp that is used.

** Recycled material is defined here as pre-consumer and post-consumer, see definition in ISO 14021. Pre-consumer material: Material redirected from the waste flow during a manufacturing process. This excludes the reuse of materials such as reprocessed materials (rework), reground materials or scrap produced in a process, and that can be recovered within the same process as it was generated in.*

Post-consumer material: Material from households or from commercial, industrial and institutional facilities in their role as end users of the product, and that can no longer be used for the intended purpose. This includes material discarded from the distribution chain.

Nordic Ecolabelling includes, for example, by-products from primary wood processing industries (sawdust, wood chips, shavings, bark, etc.) or residues from forestry operations (bark, branches, roots, etc.) in its definition of recycled material.

- ☒ **Recycled fibres:** Fulfilment of the requirement is documented for recycled fibre with either a and/or b below:
 - a) Certificate showing that the raw material is 100% recycled (post and / or pre-consumer) with Global Recycled Standard certificate 4.0 (or later versions), or other equivalent certification approved by Nordic Ecolabelling.
 - b) Present documentation demonstrating that the recycled fibre was purchased as 100% recycled (post and / or pre-consumer) and state the supplier.

Wood fibres and bamboo:

- ☒ Declaration from the producer of the fibre raw material in the case of regenerated fibre, or the producer of the dissolving pulp, that the requirement concerning wood species that must not be used has been fulfilled.
- ☒ Name (in Latin and one Nordic language) of the raw materials used.
- ☒ The producer of the fibre raw material in the case of regenerated fibre, or the producer of the dissolving pulp, must present a valid chain of custody certificate issued by FSC or PEFC that covers the virgin fibres and recycled material used in the pulp.
- ☒ Documentation from the producer of the pulp, showing the quantity of certified fibre raw material purchased. The amounts purchased must be supported by an invoice or delivery note (paper or e-invoice). The proportion of certified fibre must be updated and reported annually throughout the validity period of the licence.

O24 Regenerated cellulose fibre (viscose), process

The fibre production must be based on emission-free* processes such as lyocell, direct cellulose spinning (Spinnova process) or an equivalent.

** Emission-free processes are defined here as processes with a high degree of recycling of chemicals (> 98%) or processes without chemicals.*

- ☒ A description of the process showing that the regenerated cellulose fibre is produced using emission-free processes.

3.4.5 Synthetic fibre

Synthetic fibre is subject to the requirement that the fibre shall either comprise recycled material, if it is of fossil origin, or be bio-based (see further definition of these in the requirements below). The requirement sets out which types of recycled and bio-based raw materials are acceptable.

O25 Synthetic fibre – fossil origin

Synthetic fibre of fossil origin must comprise 100% recycled material*.

The requirement is to be documented with either a or b below:

- a) Global Recycled Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
- b) By stating the producer of the recycled raw material and documenting that the feedstock used in the raw material is 100% recycled material, see definition in requirement.

This must not include recycled food safe plastic originated from plants that are EFSA** or FDA*** approved or marketed as compatible with these.

An exception is given in requirement O10 for elastane with up to 25% in selected product types.

* Recycled material is defined here in line with ISO 14021 using the following two categories as specified, and covers both mechanical and chemical recycling:

“Pre-consumer/commercial” is defined as material that is recovered from the waste stream during a manufacturing process. Materials that are reworked or reground, or waste that has been produced in a process, and can be recycled within the same manufacturing process that generated it, are not considered to be pre-consumer recovered material.

Nordic Ecolabelling considers reworked, reground or scrap material that cannot be recycled directly in the same process, but requires reprocessing (e.g. in the form of sorting, re-melting and granulating) before it can be recycled, to be pre-consumer/commercial material. This is irrespective of whether the processing is done in-house or externally.

“Post-consumer/commercial” is defined as material generated by households or commercial, industrial or institutional facilities in their role as end-users of a product that can no longer be used for its intended purpose. This includes materials from the distribution chain.

** In line with Commission Regulation (EC) No 282/2008 of 27 March 2008 on recycled plastic materials and articles intended to come into contact with foods.

*** In line with the Code of Federal Regulations Title 21: Food and Drugs, PART 177 – INDIRECT FOOD ADDITIVES: POLYMERS.

- ☒ Declaration from the producer of the recycled raw material that the raw material is not EFSA or FDA approved, see requirement.
- ☒ a) Certificate from an independent certifier of the supply chain (e.g. Global Recycled Standard).
- ☒ b) Documentation from the producer, showing that the feedstock used in the raw material is 100% recycled material, see definition in requirement.

O26 Synthetic fibre – bio-based origin

Biomass from agricultural raw materials used for bio-based* polymer fibre (e.g. polyester and polyamide) must meet the following requirements. Secondary raw materials** are exempt from the requirement:

- The name (Latin and English) and geographical origin (country/state) must be stated for all agricultural materials.
- Palm oil and soya oil must not be used for bio-based polymer fibre in the textile.

Specific conditions for sugar cane

- Where bio-based polymer fibre is based on sugar cane, the raw material must be Bonsucro certified.

The producer of the bio-based polymer must hold Bonsucro's chain of custody (CoC) certification. The chain of custody must be ensured through mass balance, with book and claim systems not accepted. The producer of the bio-based polymer must document its purchase of certified raw materials for polymer production, for example in the form of specifications on an invoice or delivery note.

Nordic Ecolabelling may, if appropriate, consider other certification systems for the raw materials mentioned above.

** Bio-based polymer fibre is defined here as polymer fibre where at least 90% by weight of the material is bio-based.*

*** Secondary raw materials are defined here as waste products from other production, including by-products such as straw from grain production and by-products from maize. PFAD (Palm Fatty Acid Distillate) from palm oil is not considered to be a residual/waste product.*

- ☒ Name (in Latin and English) and geographical origin (country/state) of the agricultural raw materials used.
- ☒ For certified raw materials, a copy of a valid CoC certificate or a certificate number. Documentation such as an invoice or delivery note from the producer of the bio-based polymer, showing the purchase of bio-based polymer from certified raw material in at least the same annual quantity as is used in the production of the bio-based polymer.
- ☒ For secondary raw materials, documentation from the supplier of the raw material, showing compliance with the requirement's definition of secondary raw material.

O27 Synthetic fibre (bio-based), genetically modified raw materials

Agricultural raw materials from genetically modified organisms * shall not be used in the production of bio-based polymer fibre.

Secondary** raw materials are exempt from the requirement.

** Genetically modified organisms are defined in EU Directive 2001/18. Process chemicals and raw materials produced using genetically modified microorganisms in closed systems are not defined as GMOs.*

*** Secondary raw materials are defined here as waste products from other production, including by-products such as straw from grain production and by-products from maize. PFAD (Palm Fatty Acid Distillate) from palm oil is not considered to be a residual/waste product.*

- ☒ Declaration from the producer of the bio-based polymer, showing that genetically modified raw materials have not been used in the production of the polymer.

3.4.6 Recycled fibres

O28 Recycled fibres, test for environmentally harmful substances

This requirement applies to all recycled fibres – both synthetic and natural. Recycled fibres/raw materials for fibre production shall not contain the following substances above the limits stated in the table below.

PET bottles that are used in the production of polyester as well as chemically recycled polymers that perform chemical purification are exempt from the documentation requirement.

The requirement must be documented on application, with subsequent annual checks via self-assessment.

Substance/substance group	Max. limit
Metals	
Chromium total	1.0 mg/kg
Lead	0.1 mg/kg
Mercury	0.02 mg/kg
Cadmium	0.1 mg/kg
Antimony	30.0 mg/kg
Organic tin compounds	
TBT and TPhT	0.5 mg/kg
Total of DBT, DMT, DOT, DPhT, DPT, MOT, MMT, MPHT, TeBT, TeET, TCyHT, TMT, TOT, TPT	1.0 mg/kg
Chlorophenols	
Pentachlorophenol	0.05 mg/kg
Tetrachlorophenol	0.05 mg/kg
Trichlorophenol	0.2 mg/kg
Dichlorophenol	0.5 mg/kg
Monochlorophenol	0.5 mg/kg
Per- and polyfluorinated compounds	
PFOS, PFOSA, PFOSE, N-Me-FOSA, N-Me-FOSE, N-Et-FOSE	Total < 1.0 µg/m ²
PFOA	< 1.0 µg/m ²
PFHpA, PFNA, PFDA, PFUdA, PFDoA, PFTrDA, PFTeDA	0.05 mg/kg for each
Other stated per- and polyfluorinated compounds as set out in Oeko-Tex 100 Annex 5.	0.05 or 0.5 mg/kg for each as stated in Oeko-Tex 100
Phthalates	
BBP, DBP, DEP, DMP, DEHP, DMEP, DIHP, DHNUP, DCHP, DHxP, DIBP, DIHxP, DIOP, DINP, DIDP, DPrP, DHP, DNOP, DNP, DPP	Total 0.1 wt%
Flame retardants	
Flame retardants, with the exception of flame retardants approved by Oeko-Tex	< 100 mg/kg for each
Formaldehyde	16 mg/kg

Arylamines with carcinogenic properties stated in Oeko-Tex 100 Annex 5	Total 20 mg/kg
Surfactant, wetting agent residues	
Nonylphenol, octylphenol, heptylphenol, pentylphenol	Total 10 mg/kg
Nonylphenol, octylphenol, heptylphenol, pentylphenol, nonylphenol ethoxylate and octylphenol ethoxylate	Total 100 mg/kg
Dyes	
Cleavable, classified as carcinogenic in Oeko-Tex Annex 5	Total 20 mg/kg
Cleavable aniline as listed in Oeko-Tex Annex 5	Total 100 mg/kg
Classified as carcinogenic in Oeko-Tex Annex 5	50 mg/kg
Dyes classified as allergenic in Oeko-Tex Annex 5	50 mg/kg
Other dyes listed in Oeko-Tex Annex 5	50 mg/kg
Pesticides (for recycled natural fibre)	
Pesticides listed in Oeko-Tex 100 Annex 5	Total 0.5 mg/kg

Test methods: as stated in Testing Methods Standard 100 by Oeko-Tex

- ☒ Test reports or Oeko-Tex 100 class I certificate showing fulfilment of the requirement.
- ☒ A written procedure showing how an annual test is performed in line with the requirement, along with annual in-house checks of compliance with the requirement. Test results are to be archived and kept available for inspection by Nordic Ecolabelling.

3.4.7 Additives and fibre treatment

The requirement relates to any additives and coatings applied to the fibre. The requirement concerns all fibre types.

O29 Treatment and coating of fibre and yarn

- Any fibre treatment or coating must meet the following requirements: O31 Classification of chemical products, O32 Prohibition of CMR substances, O33 Prohibited substances* and O39 Chemicals that contains silicone.
- Treatment or coating of wool to prevent felting:
 - Chlorine and fluorine compounds are prohibited.
 - Wool fibres shall only be coated with biodegradable** coating

* An exception is made for added nano titanium dioxide in the production of regenerated cellulose.

** Coating must be aerobically degradable according to OECD 301 A-F or OECD 310 (readily biodegradable) or 302 A-C (inherently biodegradable).

- ☒ Declaration from the fibre producer/supplier that requirement is fulfilled, and description of and safety data sheet for additives and coatings applied to the fibre.
- ☒ For coating of the wool fibre: Documentation showing that the coating is degradable in accordance with the requirement.

3.5 Chemicals used in textile production

The requirements in this section apply to all chemicals used in the production of textiles, unless otherwise is specified in the requirement. Examples of chemicals include softeners, bleaching agents, pigments and dyes, stabilisers, dispersants, sizing agents, enzymes and other auxiliary chemicals. The chemicals are used in a variety of processes in textile production, including carding, spinning, weaving, knitting, washing, bleaching, dyeing, printing and finishing, e.g. coating, lamination or bonding. The requirements apply irrespective of whether the textile producer or their supplier uses the chemicals.

Chemicals used in water treatment plants or for the maintenance of production equipment are exempted from the requirements.

3.5.1 General chemical requirements

O30 Overview of chemicals

All chemical products shall be stated and documented with a safety data sheet. A collective list or separate lists shall be drawn up for each production process and/or supplier, including for printing on textiles and products.

The following information shall be submitted for each chemical product:

- trade name
- the function of the chemical
- the process step in which the chemical product is used
- the supplier/producer using the chemical product



List of chemicals for every production process and/or supplier.



Safety data sheet for every chemical product, in line with Annex II of REACH 1907/2006.

O31 Classification of chemical products

Chemical products shall not be classified as any of the hazard categories set out in the table below.

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Toxic to aquatic life	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2	H400 H410 H411
Hazardous to the ozone layer	Ozone	H420
Carcinogenicity*	Carc 1A or 1B Carc 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362
Acute toxicity	Acute Tox 1 or 2 Acute Tox 3	H300, H310, H330 H301, 311, 331
Specific target organ toxicity with single or repeated exposure	STOT SE 1 STOT RE 1	H370 H372
Sensitising on inhalation or skin contact	Resp. Sens. 1, 1A or 1B Skin Sens. 1, 1A or 1B	H334** H317**

Note that responsibility for correct classification lies with the manufacturer.

** Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.*

*** Non-disperse dyes are exempt from the prohibition of H334 and H317, provided that non-dusting formulations are used or that automatic dosing is used.*

- ☒ Declaration from the chemical manufacturer that the requirement is fulfilled.
- ☒ For exempted non-disperse dyes: Declaration that non-dusting formulations of these are used or that automatic dosing is used.

O32 Prohibition of CMR substances

Chemical products shall not contain any ingoing substances* that have any of the classifications in the table below.

* See the definition of ingoing substances and impurities in section 1.

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Carcinogenicity*	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362

** Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.*

- ☒ Declaration from the chemical producer, that the requirement is fulfilled.

O33 Prohibited substances

The following substances shall not be an ingoing substance* in chemical products:

* See the definition of ingoing substances and impurities in section 1 Definitions.

- Substances on the Candidate List (<https://echa.europa.eu/candidate-list-table>) Siloxanes D4, D5 and D6 have their own documentation requirement, see requirement O39.
- Substances that are PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) as set out in the criteria of REACH Annex XIII
- Substances that are considered potential endocrine disruptors in category one or two on the EU's Priority List of substances for further evaluation of their role in endocrine disruption, plus endocrine disruptive substances identified in the Biocidal Products Regulation (EU 528/2012) and/or the Plant Protection Products Regulation (EC 1107/2009). The full specification of substances on the EU's list can be found at http://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf (Annex L, page 238 onwards)
- Flame retardants (e.g. short-chain chlorinated paraffins)
- Per- and polyfluorinated compounds, e.g. PTFE, PFOA and PFOS
- Chlorinated polymers such as PVC and PVDC
- Nanoparticles from nanomaterial*
- Heavy metals**

- Azo dyes that may release carcinogenic aromatic amines (see Appendix 2)
- Phthalates
- Chlorinated solvents and carriers, including chlorophenols and chlorobenzenes
- Alkylphenols and alkylphenol ethoxylates (APEO)
- Organotin compounds
- Linear alkylbenzene sulphonates (LAS)
- Quaternary ammonium compounds such as DTDMAC, DSDMAC and DHTDMAC
- EDTA (ethylene diamine tetraacetic acid) and DTPA (diethylene triamine pentaacetate)

** The definition of nanomaterial follows the European Commission's definition of nanomaterial of 18 October 2011 (2011/696/EU). Natural pigments are exempted from the requirement.*

*** Heavy metals are the metals listed in point 2 below. Exemptions from the requirement are granted for:*

1. Copper in metal complex dyes, see requirement O35.
2. Metal impurities in dyes and pigments up to the amounts set out in ETAD, Annex 2 "Heavy metal limits for dyes": antimony (50 ppm), arsenic (50 ppm), cadmium (20 ppm), chromium (100 ppm), lead (100 ppm), mercury (4 ppm), zinc (1500 ppm), copper (250 ppm), nickel (200 ppm), tin (250 ppm), barium (100 ppm), cobalt (500 ppm), iron (2500 ppm), manganese (1000 ppm), selenium (20 ppm) and silver (100 ppm)
3. Exception for iron used for colour depigmenting before printing.



Declaration from the chemical manufacturer or chemical supplier that the requirement is fulfilled.

3.5.2 Specific chemical requirements

O34 Biocides and antibacterial substances

The following substances, which may have a biocidal and/or antibacterial effect in fibre, fabric or the finished textile, are not permitted:

- Antibacterial substances (incl. silver ions, nanosilver and nanocopper) and/or
- Biocides in the form of pure active ingredients or as biocidal products.

Naturally occurring antibacterial effects in materials are not subject to the prohibition.



Declaration from the chemical manufacturer/supplier that the requirement has been fulfilled.

O35 Metal complex dyes and pigments

Only metal complex dyes and pigments based on copper that make up a maximum of 5% by weight may be used, and only for the following fibres and processes:

- when dyeing wool fibre
- when dyeing polyamide fibre
- when dyeing a blend of wool and/or polyamide with regenerated cellulose fibre

- ☒ Technical datasheets or test reports showing fulfilments of the requirement.

O36 Degradability of detergents, softeners and complexing agents

Chemical products that are used as detergents, softeners and complexing agents shall be either readily aerobically biodegradable or inherently aerobically biodegradable, in accordance with test methods OECD 301 A-F (60% degradability), OECD 310 (60% degradability), OECD 302 A-C (70% degradability) or equivalent test methods.

Silicone softeners and complexing agents referred to as binders “chelating agents” and “sequestering agents” are also covered by the requirement.

- ☒ The chemical manufacturer must submit safety data sheets or test reports showing fulfilment of the requirement.

O37 Sizing agents

This requirement only applies to weaving processes.

At least one of the alternatives below shall be fulfilled and documented:

1. Sizing agents must be either readily aerobically biodegradable or inherently aerobically biodegradable, in accordance with test methods OECD 301 A-F (60% degradability), OECD 310 (60% degradability), OECD 302 A-C (70% degradability) or equivalent test methods

or

2. Over 80 wt% of the sizing agents used must be recovered from the wastewater.

- ☒ Alternative 1: Safety data sheet for sizing agents used, showing fulfilment of the requirement.
- ☒ Alternative 2: Declaration from the weaving factory that the requirement is fulfilled, plus brief description of the recovery process from the weaving factory.

O38 Bleaching agents

Chlorinated substances shall not be used as bleaching agents. The requirement applies to all types of textile processes, including bleaching of yarn, fabric or the finished textile.

- ☒ Declaration from the producer of the yarn, fabric or finished textile that the requirement is fulfilled.

O39 Chemicals that contain silicone

D4 (CAS no. 556-67-2), D5 (CAS no. 541-02-6) and D6 (CAS no. 540-97-6) shall only be present in the form of residues from the raw material production, and each shall only be present in amounts up to 1000 ppm in the silicone raw material (the chemical).

- ☒ Test from the chemical manufacturer showing that the requirement is met.

O40 VOC in printing paste

Printing paste may not contain more than 5% volatile organic compounds (VOC)*.

** Volatile organic compounds are defined here as organic compounds with a steam pressure exceeding 0.01kPa at 20°C.*

- ☒ Declaration from the producer or supplier of the printing paste that the requirement is fulfilled.

3.6 Coatings, laminates and membranes

O41 Textiles as substrate (e.g. in laminates)

Textiles used as substrate/carrier material in the production of textiles with coatings, laminates and membranes shall fulfil the requirements for the respective fibres in section 3.4.

See the definition of coatings, laminates and membranes in section 1 Definitions.

- ☒ Documentation as described in the relevant fibre requirement.

O42 Coatings, laminates and membranes

Additives (e.g. added in master batch) in polymers used in coatings, laminates and membranes must meet and document following requirements:

- O31 Classification of chemical products,
- O32 Prohibition of CMR substances,
- O33 Prohibited substances
- O35 Metal complex dyes and pigments.

- ☒ Documentation as described in the relevant fibre requirement.

3.7 Specific chemical requirement for adhesives

O43 Adhesives

The requirement covers adhesives used to glue textiles, coatings, membranes, laminates or other materials.

Adhesive used for small info labels such as care labels is not covered by the requirement.

The adhesive:

- must not have any added colophony resin
- and
- must meet requirements O31 Classification of chemical products, O32 Prohibition of CMR substances and O33 Prohibited substances.

- ☒ Safety data sheet and declaration from the chemical manufacturer that the requirement is fulfilled.

3.8 Discharges from wet processes

O44 COD, temperature and pH in wastewater from wet processes

- Discharges of COD in wastewater from wet processes shall not exceed 20 g per kg of textile produced. Wastewater that is sent to municipal or other regional treatment works is exempted.
- Test method: COD content shall be tested in accordance with ISO 6060 or equivalent.
- The pH value of the wastewater released to the surface water shall be between 6 and 9 (unless the pH value in the recipient lies outside this interval).
- The temperature of the wastewater released to the surface water shall be lower than 40°C (unless the temperature in the recipient is higher).

- A test report shall be submitted with the application. Thereafter, the applicant must have a procedure in place for annual testing in line with the requirement and for ensuring compliance with the requirement. Nordic Ecolabelling must be informed if the requirement is not fulfilled.
- ☒ Report submitted with application, showing average monthly calculations of COD, pH and temperature for at least three of the past 12 months. (For COD, measurement of PCOD, TOC or BOD may be used if a correlation to COD is evident).
- ☒ Description of how the wastewater from the wet process is treated and if the wastewater is sent to municipal or other regional treatment.
- ☒ A written procedure showing how an annual test is performed in line with the requirement, along with in-house checks of compliance with the requirement.

3.9 Energy and water consumption

O45 Implementation of BAT for energy efficiency and water savings

The applicant shall demonstrate that the energy used for washing, drying and curing associated with dyeing, printing and finishing the textile is measured and compared with BAT levels or own figures from before implementing efficiency techniques.

This shall be done as a part of an energy management system or a system for the management of CO₂ emissions. The requirement may be documented per process.

The applicant shall demonstrate that the water consumption associated with wet processes such as dyeing, printing and finishing the textile is measured

There shall also be documentation for that the production facilities have implemented a minimum of BAT water and energy efficiency techniques or measures for in-house production of solar energy, see the table and the extra information about BAT themes below. This applies to the total production volume for the individual production facility.

BAT themes	Production volume	
	<10 tonnes per day	>10 tonnes per day
1. General energy management	Two techniques	Three techniques
2. Washing and rinsing	One technique	Two techniques
3. Drying and curing using stretchers	One technique	Two techniques

BAT themes:

General techniques:

- Measuring how much is consumed and where
- Process monitoring and automatic control systems for power regulation, filling volumes, temperatures and timings
- Insulating pipes, valves and flanges
- Frequency-controlled electric motors and pumps
- Closed design of machines to reduce evaporation losses
- Reuse of water and liquids in batch processes
- Combining multiple wet treatments into one process
- Heat recovery, e.g. from washing, steam condensate, exhaust air from processes, exhaust gases from combustion

- Solar thermal panels, solar photovoltaic panels or a heat recovery system for used hot water, installed within the operation and generating energy amounting to 30% of what the process requires

Washing and rinsing:

- Using cooling water as process water
- Replacing overflow tanks with drainage/inlet tanks
- Using “intelligent” rinsing technologies with water flow control and counter flow
- Installing a heat exchanger

Drying and curing using stretchers:

- Optimising air circulation
- Insulating the premises
- Installing effective burner systems
- Installing heat recovery systems

- ☒ The applicant must compile and submit reports from energy management systems for the individual dyeing, printing and finishing facilities. ISO 50001 or equivalent systems for energy management or management of CO₂ emissions are accepted as documentation of the energy management system.
- ☒ The applicant must compile and submit measurements of water consumption for the individual dyeing, printing and finishing facilities.
- ☒ The applicant must submit an overview of the dyeing, printing and finishing facilities, stating the production volume per day for each process.
- ☒ For each implementation of a BAT technique or process using solar energy produced in-house, the applicant must submit images of the facility, technical descriptions of the individual technologies and assessments of the energy savings achieved, along with a statement of the process and operation in which the technology has been implemented.

3.10 Fillings, stuffing materials and padding

The following requirements concern fillings, stuffing materials and padding that individually account for more than 1 wt% of the total filling, stuffing material or padding in the final product.

O46 Fibres in filling and stuffing materials

Fillings, stuffing materials and padding made from fibre must meet the following fibre requirements:

- Cotton fibre: requirement O14
- Flax (linen), ramie, sisal, hemp, jute and other bast fibres: requirement O16
- Wool fibre: requirements O18, O19 and O22
- Regenerated cellulose fibre: requirement O23
- Synthetic fibre: requirements O25
- Recycled fibres: O28
- All fibres: requirement O29

- ☒ Here the same documentation is required as stated in the requirements referred to.

O47 Feathers and down – ethical requirements

Use of feathers and down plucked from live birds is prohibited.

Forced feeding of birds is prohibited.

Recycled* down and feathers are exempt from the requirement, but documentation for traceability shall be provided to confirm that the down and feathers are recycled.

** Recycled down and feathers are defined here as post-consumer recycled down and feathers in line with standard ISO 14021.*

- ☒ Responsible Down standard or a certificate from another standard that fulfils the requirement.
- ☒ Recycled down and feathers: Recycled Global Standard certificate. Alternatively, documentation from the supplier, confirming that the down/feathers are post-consumer recycled down or feathers.

O48 Feathers and down – microbial cleanliness

Feathers and down must comply with the following to document microbial cleanliness:

- Oxygen index number of max. 10
- Fat content must lie within the range 0.5% to 2.0%
- Determined in accordance with the standards:
 - EN 12935 Feather and down – Hygiene and cleanliness requirements,
 - EN 1162 “Feathers and down. Test methods – Determination of the oxygen index number”, and
 - EN 1163 Feather and down – Test methods – Determination of the oil and fat content.

- ☒ Microbial cleanliness: Test report showing compliance with the requirement.

O49 Feather and down - Labelling of filling materials

Feather and down filling materials in duvets and pillows must be labelled in accordance with standard EN 12934 “Feather and down – Composition labelling of processed feathers and down for use as sole filling material”.

- ☒ Declaration that the labelling of the filling material complies with EN 12934.

O50 Additives and treatments

Fillings, stuffing materials and padding (except for fibres which have their own requirement O46) must not be added or treated* with:

- Substances on the REACH Candidate List. Link to the REACH Candidate List: <http://echa.europa.eu/web/guest/candidate-list-table>
- PVC
- Organic chlorinated compounds
- Flame retardants (e.g. short chained chlorinated paraffins)
- Halogenated bleaching chemicals
- Aziridines and polyaziridines
- Carcinogenic, mutagenic and reprotoxic compounds (categories 1A, 1B and 2 in accordance with CLP Regulation 1272/2008)
- Phthalates

- Fluorinated organic compounds such as PFOA** (perfluorooctanoic acid and its salts/esters), PFOS (perfluorooctane sulphonate and its compounds), and PTFE (polytetrafluoroethylene), etc.
- Organotin compounds
- Biocides or biocidal products intended to add a disinfecting or antibacterial effect in the product.

* See the definition of impurities and ingoing substances in section 1 Definitions.

** “Be aware of national legislation concerning PFOA, if the product is to be sold/ marketed in Norway. In Norway, PFOA is governed by the “Regulation on restrictions to the use of health- and environmentally hazardous chemicals and other products (Product Regulations)”, Section 2-32.

- ☒ Declaration from the producer/supplier of the filling/stuffing material showing that the requirement is fulfilled.
- ☒ For natural fillings and stuffing materials such as down, feathers or ones with no chemical additives or treatments: Declaration from the producer/supplier that no chemical additives or treatments have been used.

O51 Emission requirements for foamed synthetic materials

For foamed synthetic materials such as PU foam, latex foam and expanded polystyrene, emissions of the following substances and substance groups shall not exceed the levels stated in the table below.

Emission of volatile organic compounds mg/m ³	
Substance or substance group	Requirement limit
Formaldehyde (50-00-0)	16
Toluene (108-88-3)	0.1
Styrene (100-42-5)	0.005
Vinylcyclohexene (100-40-3)	0.002
4-Phenylcyclohexene (4994-16-5)	0.03
Vinyl chloride (75-01-4)	0.002
Aromatic hydrocarbons	0.3
Volatile organic compounds	0.5

Emission testing must be performed according to the ISO 16000 standard, parts 3, 6, 9, & 11.

- ☒ Test reports showing that the requirement is fulfilled.
- ☒ Alternatively, a certificate from either Oeko-Tex class I Baby or CertiPUR may be used as documentation for the requirement.

O52 Polycyclic aromatic hydrocarbons (PAHs):

For foamed synthetic materials such as PU foam, latex foam and expanded polystyrene the content of each individual PAH stated in the requirement shall be below 0.5 mg/kg.

The requirement concerns the following PAHs:

Substance name	CAS no.
Benzo[A]Pyrene	50-32-8
Benzo[E]Pyrene	192-97-2
Benzo[A]Anthracene	56-55-3
Dibenzo[A,H]Anthracene	53-70-3
Benzo[B]Fluoranthene	205-99-2
Benzo[J]Fluoranthene	205-82-3
Benzo[K]Fluoranthene	207-08-9
Chrysene	218-01-9

Must be tested in accordance with ISO 18287 or ZEK 01.2-08 (GC/MS).

- ☒ Test report showing that the requirement is fulfilled.
- ☒ A certificate from Oeko-Tex 100 class I Baby can also be used as documentation.

O53 Polyurethane foam (PU foam)

Fillings, stuffing materials and padding made from polyurethane foam shall meet the following requirements:

- CFC, HCFC, HFC, methylene chloride or other halogenated organic compounds shall not be used as blowing agents.
 - Isocyanate compounds shall only be used in a closed process with the prescribed protective equipment in accordance with the official requirements.
- ☒ Declaration from the foam manufacturer/supplier that the requirement is fulfilled.

O54 Latex

Fillings, stuffing materials and padding made from synthetic latex or natural latex shall meet the following requirements:

- The butadiene content shall be lower than 1 mg/kg latex.
- The concentration of *n*-nitrosamines* shall not exceed 0.0005 mg/m³, measured by the climate chamber test conducted in accordance with the standard ISO 16000-9.

* *n*-nitrosodimethylamine (NDMA), *n*-nitrosodiethylamine (NDEA), *n*-nitrosomethylethylamine (NMEA), *n*-nitrosodiisopropylamine (NDIPA), *n*-nitrosodi-*n*-propylamine (NDPA), *n*-nitrosodi-*n*-butylamine (NDBA), *n*-nitrosopyrrolidine (NPYR), *n*-nitrosopiperidine (NPIP), *n*-nitrosomorpholine (NMOR).

Test method: Butadiene can be determined according to EN 13130-4 or similar method.

- ☒ The latex producer must state test results in accordance with the requirement.

3.11 Hides/skins and leather

O55 Origin of hides/skins and leather

Only the use of raw animal hides and skins originating from the production of milk, wool and/or meat/fish production is permitted.

Only raw hides and skins from the following animals are permitted: fish*, sheep, goats, cows, horses, pigs, elk, deer and reindeer.

* Fish skin from fish red listed as endangered¹ is not accepted.

- ☒ The applicant must submit a declaration from the leather producer or leather supplier, confirming that the raw hides/skins used derive from animals raised for milk, wool and/or meat/fish production.

O56 Chromium content in leather and hides/skins

The content of chromium (total) in the final treated leather or hide/skin (including finishing) shall be less than or equal to 0.1% (mass of chromium per total dry weight of leather or hide/skin) according to EN ISO 5398.

There shall be no chromium (VI) present in the final treated leather or hide/skin (including finishing), in accordance with EN ISO 17075 (detection limit of 3 ppm) or equivalent.

- ☒ The applicant shall submit a test report for both total chromium and chromium (VI), demonstrating fulfilment of the requirement.

O57 Cadmium and lead

Cadmium and lead shall not be found in processed hides/skins or leather.

The content of cadmium and lead shall be tested according to the methods AAS, ICP-OES or ICP-MS (detection limit 10 ppm).

- ☒ A test report from the tannery showing that the requirement is fulfilled.

O58 Chemical overview for leather and hides/skin production

All chemical products used in the various processes during the production of hides/skins or leather shall be stated, with safety data sheets as documentation.

The following information must be submitted for each chemical product:

- trade name
- the function of the chemical
- the process step in which the chemical product is used
- supplier, that uses the chemical product

The requirement also applies to all chemical products used for coatings or other finishing.

- ☒ Overview providing the required information for all the chemical products used.
- ☒ Safety data sheet for every chemical product, in line with Annex II of REACH 1907/2006.

O59 Classification of chemicals

The chemicals used shall not be classified as any of the hazard categories set out in the table below. The requirement applies to all chemicals used in every step of manufacturing leather and hides/skins (including finishing).

¹ The IUCN Redlist, <https://www.iucnredlist.org/>

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Toxic to aquatic life	Aquatic Acute 1	H400
	Aquatic Chronic 1	H410
	Aquatic Chronic 2	H411
Hazardous to the ozone layer	Ozone	H420
Carcinogenicity*	Carc 1A or 1B	H350
	Carc 2	H351
Germ cell mutagenicity*	Muta. 1A or 1B	H340
	Muta. 2	H341
Reproductive toxicity*	Repr. 1A or 1B	H360
	Repr. 2	H361
	Lact.	H362
Acute toxicity	Acute Tox 1 or 2	H300, H310, H330
	Acute Tox 3	H301, 311, 331
Specific target organ toxicity with single or repeated exposure	STOT SE 1	H370
	STOT RE 1	H372
Sensitising on inhalation or skin contact	Resp. Sens. 1, 1A or 1B	H334**
	Skin Sens. 1, 1A or 1B	H317**

* Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.

** Applies only to pigments, dyes and colourings



Declaration from the chemical manufacturer that the requirement is fulfilled.

O60 Classification of ingoing substances in chemical products

Chemical products shall not contain any ingoing substances* that have any of the classifications stated in the table below. The requirement applies to all chemicals used in every step of manufacturing leather and hides/skins (including finishing).

* See the definition of ingoing substances and impurities in section 1 Definitions.

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Carcinogenicity*	Carc. 1A or 1B	H350
	Carc. 2	H351
Germ cell mutagenicity*	Muta. 1A or 1B	H340
	Muta. 2	H341
Reproductive toxicity*	Repr. 1A or 1B	H360
	Repr. 2	H361
	Lact.	H362

* Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.



Declaration from the chemical manufacturer that the requirement is fulfilled.

O61 Prohibited substances

The following substances shall not be present as ingoing substance* in chemical products used to produce hides/skins and leather. The requirement applies to all chemicals used in every step of manufacturing leather and hides/skins (including finishing).

* See definition of ingoing substances in section 1 Definitions.

- Substances on the Candidate List (<https://echa.europa.eu/candidate-list-table>)

- Substances that are PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) as set out in the criteria of REACH Annex XIII
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects. The list can be found at http://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf (Annex L, pages 238–249)
- Flame retardants (e.g. short chain chloroparaffins)
- Per- and polyfluorinated compounds, e.g. PFOA and PFOS
- Nanoparticles*
- Heavy metals in dyes and pigments **
- Azo dyes that may release carcinogenic aromatic amines (see Appendix 2)
- Phthalates
- Organotin compounds
- Chlorinated solvents, including chlorophenols and chlorobenzenes
- Alkylphenol ethoxylates (APEO)
- Linear alkylbenzene sulphonates (LAS)
- Aziridines and polyaziridines
- EDTA (ethylene diamine tetraacetic acid) and DTPA (diethylene triamine pentaacetate)

* *An exception is made for pigments.*

** *Exemptions from the requirement are granted for metal impurities in dyes and pigments up to the amounts set out in ETAD, Annex 2 "Heavy metal limits for dyes": antimony (50 ppm), arsenic (50 ppm), cadmium (20 ppm), chromium (100 ppm), lead (100 ppm), mercury (4 ppm), zinc (1500 ppm), copper (250 ppm), nickel (200 ppm), tin (250 ppm), barium (100 ppm), cobalt (500 ppm), iron (2500 ppm), manganese (1000 ppm), selenium (20 ppm) and silver (100 ppm).*

- ☒ Declaration from the chemical manufacturer or chemical supplier that the requirement is fulfilled.

O62 Biocides and antibacterial substances

The addition and/or integration of substances that may have a biocidal and/or antibacterial effect into hides/skins or leather is not permitted.

The requirement also applies during the storage and transport of hides/skins and leather.

Biocides/antibacterial substances include silver compounds, organotin compounds, chlorophenols, nano silver and nanogold.

- ☒ Declaration from the producer of the hide/skin or leather that the requirement is fulfilled.

O63 Discharges to wastewater

Wastewater from tanneries shall contain no more than 1 mg chromium (total) per litre of water.

COD in the wastewater from tanneries shall not exceed 10 kg/tonne of wet salted raw material (raw hide or skin).

The requirement covers both the tanning process itself and post-tanning.

Test method: COD content shall be tested according to ISO 6060 or equivalent.

Test report shall be submitted upon application and then the applicant shall have a routine to test annually according to the requirement as well as ensure compliance with the requirement. Nordic Ecolabelling shall be notified if the requirement is not complied with.

- ☒ Test report showing that the requirement is fulfilled.

O64 Water consumption for hides/skins and leather

The annual average water consumption for tanning leather shall not exceed 25 m³/tonne of raw hide.

The annual average water consumption for tanning sheepskin shall not exceed 120 l/skin.

- ☒ State the water consumption and submit documentation confirming consumption, for example from suppliers or copies of invoices. State the total amount in tonnes of hides/skins/leather that has been treated and a calculation showing water consumption per tonne of hides/skins/leather.

O65 Energy consumption

The amount of electricity (in kWh) and fuel consumed during tanning of hides/skins and leather shall be stated.

- ☒ State the consumption of electricity (in kWh) and the purchase of fuel and attach confirmation from the supplier or a copy of the invoice to document this. State the total weight (in kg) of the hides/skins and leather processed.

3.12 Quality and performance requirements

Nordic Ecolabelling sets requirements concerning the performance and durability of textiles, hides/skins and leather. These requirements are important, since a Nordic Swan Ecolabelled product must offer good quality and, seen from an environmental and resource perspective, products must be usable for a certain length of time before they wear out and a new replacement is required.

If the Nordic Swan Ecolabelled product is not in production at the time of application, the quality requirements may be documented with tests of a similar textile product. In such cases, this must be described.

3.12.1 Quality and performance requirements for textiles

O66 Formaldehyde emissions from textiles

The amount of free and partly hydrolysable formaldehyde in the final textile shall not exceed 16 ppm.

Test method: The content of formaldehyde shall be tested in accordance with standard EN ISO 14184-1.

- ☒ Test report showing that the requirement is fulfilled.
- ☒ A certificate from Oeko-Tex 100 class I Baby or GOTS can also be used as documentation.

O67 Dimensional changes during washing and drying

Dimensional changes after washing and drying shall not exceed:

- ± 2% for curtains and upholstery covers that are removable and can be washed.
- ± 5% for woven products for duvets and pillows, in accordance with EN 13186.

- $\pm 3\%$ for woven textiles not covered by the categories above.
- $\pm 7\%$ for knitwear/hosiery
- $\pm 10\%$ for 100% wool knitwear (after 10 washes)

The requirement does not apply to fibres or yarns, products clearly labelled “dry clean only” or equivalent (if the product in question is normally labelled in this way), nor upholstery that is not intended for removal and washing.

The following testing procedure must be followed:

- 10 washes for 100% wool textiles and 1 wash for other textiles
- Temperature, laundry program and detergent as stated on the care label
- drying as stated on the care label
- 100% wool textiles should be stretched back into shape after each wash

Test method:

The tests should be carried out in accordance with EN ISO 6330 “Textiles – Domestic washing and drying procedures for textile testing”, combined with ISO 5077 “Textiles – Determination of dimensional change in washing and drying”.

For professional textiles intended for industrial laundry, the standard ISO 15797 Textiles – “Industrial washing and finishing procedures for testing of workwear”, combined with EN ISO 5077.

Woven products for duvets and pillows are to be tested in accordance with EN 13186 – “Specification of feather and down filled bedding articles”.



Test report showing that the requirement is fulfilled.

O68 Colour fastness to light

The following levels shall be achieved for colour fastness to light:

- For textiles for outerwear, swimwear and UV protective clothing: level 3-4
- For textiles for furniture, curtains and drapery: level 5

Level 4 is permitted for textiles for furniture, curtains or drapery, if the textile is both lightly dyed (standard depth $<1/12$ in accordance with 105 A06) and consists of blends with more than 20% wool or other keratin fibres, or of blends with more than 20% linen or other bast fibres.

The requirement does not apply to white textiles, mattress covers and mattress protectors.

Test method: Tests shall be performed in accordance with EN ISO 105 B02 or equivalent.



Test report showing that the requirement is fulfilled. Alternatively, a GOTS certificate may be used as documentation for the selected types of clothing.

O69 Colour fastness to washing

Colour fastness shall meet the following conditions as a minimum:

- For colour change: level 3-4
- For discolouration: level 3-4

The requirement does not concern textile elements that are clearly labelled “dry clean only” or equivalent (if the product in question is normally labelled in this way), nor white products, products that are neither dyed nor printed, nor textiles that are not intended for removal and washing.

Test method: The tests shall be performed in accordance with ISO 105 C06 (a single wash at the temperature stated on the product), or equivalent.

- ☒ Test report showing that the requirement is fulfilled. Alternatively, a GOTS certificate may be used as documentation.

070 Colour fastness to perspiration

Colour fastness to perspiration shall for underwear, sportswear and t-shirts meet the following conditions as a minimum:

- For discolouration: level 3-4
- For staining: level 3-4

Level 3 is, however, permitted for textiles that are dark in colour (standard depth > 1/1) and/or made from recycled wool.

The requirement does not cover white textile products or textile products that are neither dyed nor printed.

Test method: Tests must be performed in accordance with ISO 105 E04 (both acid and alkaline, plus comparison with textile of blended fibres) or equivalent.

- ☒ Test report showing that the requirement is fulfilled.

071 Colour fastness to rubbing (wet)

Colour fastness to wet rubbing shall be at least level 2-3.

The requirement does not concern white products or products that are neither dyed nor printed.

Denim indigo dye is exempted from the requirement level of 2-3 and must instead be documented as meeting level 1. When using this exemption, the product must be accompanied by information that the textile's dye may cause cross-staining.

Test method: Tests shall be performed in accordance with ISO 105 X12 or equivalent.

- ☒ Test report showing that the requirement is fulfilled.

072 Colour fastness to rubbing (dry)

Colour fastness to dry rubbing shall be at least level 4.

The requirement does not apply to white textile products, textile products that are neither dyed nor printed, curtains or other equivalent home furnishing textiles.

Denim indigo dye is exempted from the requirement for a minimum of level 4. Denim indigo dye must instead achieve at least a level 2-3. When using this exemption, the product must be accompanied by information that the textile's dye may cause cross-staining.

Test method: Tests shall be performed in accordance with ISO 105 X12 or equivalent.

- ☒ Test report showing that the requirement is fulfilled. Alternatively, an EU Ecolabel version 2014 or Oeko-Tex 100 Version 2019 certificate may be used as documentation for the requirement.

073 Ban on fabricated fabric holes

The fabric shall not be made with "wear" holes, that are fabricated to look like wear.

- ☒ Declaration by the textile manufacturer that the requirement is fulfilled.

074 Abrasion resistance

The requirement concerns textile elements accounting for more than 10 wt% of the total textile product.

The following textile products are subject to requirements concerning abrasion resistance, expressed as number of rubs/abrasions (Martindale):

- Domestic upholstery: 40,000
- Commercial upholstery: 80,000
- Professional workwear: 20,000
- Outdoor workwear and outdoor wear: 30,000

Test method: Tests shall be performed in accordance with EN ISO 12947-2 or an equivalent standard.

☒ Test report showing that the requirement is fulfilled.

O75 Pilling – upholstery

Upholstery shall have a pilling resistance corresponding to level 4.

For wool and wool blend upholstery fabric, the durability against pilling shall be at least level 3.

Test method: Tests shall be performed in accordance with EN ISO 12945-2 or an equivalent standard.

☒ Test report showing that the requirement is fulfilled.

O76 Quality requirement for fleece

This requirement concerns fleece.

When tested for propensity to surface fuzzing and to pilling fleece shall achieve at least level 4 at 5,000 cycles (rubs).

Test method: ISO 12945-2 “Textiles – Determination of fabric propensity to surface fuzzing and to pilling. Part 2: Modified Martindale method”.

☒ Test report showing compliance with the pilling requirement in accordance with standard EN 12945 -2.

3.12.2 Quality and performance requirements for hides/skins and leather

O77 Formaldehyde emissions from skin and leather

The amount of free and partly hydrolysable formaldehyde in the final skin and leather shall not exceed:

- 20 ppm in products for children
- 75 ppm in other products

Test method: The content of formaldehyde shall be tested in accordance with EN ISO 17226-1 or 2.

☒ Test report showing that the requirement is fulfilled.

O78 Tear strength for skin and leather

Tear strength must be more than 20 N.

Test method: Testing must be performed in accordance with ISO 3377 or equivalent.

☒ Test report showing that the requirement is fulfilled.

O79 Flexing test for leather

When testing leather’s flexing resistance, the leather shall manage 20,000 test repetitions (20 kc) without sustaining visible damage. The requirement only applies to leather with a surface coating.

Test method: The test shall be performed in accordance with ISO 5402 or equivalent.

- ☒ Test report showing that the requirement is fulfilled.

O80 Colour fastness to water - leather

Colour fastness when exposed to water shall be at least level 3 for leather that is dyed or has a surface finish.

Test method: The test must be performed in accordance with ISO 11642 or equivalent.

- ☒ Test report showing that the requirement is fulfilled.

O81 Colour fastness to wear - leather

Colour fastness during wet and dry wear must be at least level 3 for leather that is dyed or has a surface finish.

Test method: The test shall be performed in accordance with ISO 11640 or equivalent, with 20 repetitions for wet wear and 50 repetitions for dry wear. The results are to be assessed using ISO 105-A02 and ISO 105-A03 or equivalent.

- ☒ Test report showing that the requirement is fulfilled.

3.12.3 Recycling of textiles and fabrics

O82 Unsold textiles and nonconformity productions

Unsold textiles and fabrics and nonconformity productions shall not be sent for incineration or dumped in landfill.

The manufacturer shall inform Nordic Ecolabelling about how unsold textiles and nonconformity productions are dealt with.

- ☒ Description of how unsold textiles and nonconformity productions are dealt with.

3.13 Packaging, storage and transport

O83 Chlorophenols, PCB and organotin compounds during transport and storage.

Chlorophenols (and salts and esters of chlorophenol), PCB and organotin compounds shall not be used in connection with the transport or storage of products and semi-manufactures.

- ☒ Declaration from the suppliers at every stage of the production chain that these substances or compounds are not used in the yarn, fabric and/or end product or a valid licence certificate for the EU Ecolabel, issued in accordance with the Commission decision from 2014.

O84 Prohibition of PVC and PVDC

PVC and PVDC must not be used in the packaging.

- ☒ Declaration from the textile manufacturer or brand owner.

O85 Recyclable packaging material

It shall be possible to recycle the main material* in the primary packaging** via the existing waste systems operating in the Nordic region today.

** The main material is defined as the material that makes up 90 wt% or more of the total packaging.*

*** Primary packaging means the packaging, that stays with the Nordic Swan Ecolabelled product all the way to the customer or individual packaging that accompanies the product to the retailer. Incineration with energy recovery does not count as material recycling.*

- ☒ Description of the main material in the packaging and how the material can be recycled in existing waste and resource systems.

O86 Design of recyclable packaging

The requirement covers primary packaging* for the Nordic Swan Ecolabelled product.

Only monomaterials** shall be used in the packaging. If various separate packaging elements are used, these may each be made of a separate monomaterials and shall be possible to separate in the waste sorting.

Multi-material hangers are allowed if these are collected and recycled in a textile manufacturer's take-back system.

Labels may be applied to the packaging if they make up no more than 5% by weight and do not prevent recycling of the material.

Plastic packaging

Plastic packaging shall be made from either polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET).

Coloured plastic cannot be used for virgin plastic feedstock. Only if at least 50% by weight of the plastic is recycled material***, colouring is permitted.

** Primary packaging is defined here as packaging from the manufacturer that accompanies the product all the way to the consumer. Delivery packaging used by online retailers is not considered to be primary packaging.*

*** A monomaterial is defined as material components that are not composed of multiple material types. For example, the same plastic type and cardboard are monomaterials.*

**** Recycled material is defined as post-consumer/commercial recycled material defined in the requirement according to ISO 14021:2016:*

“Post-consumer/commercial” is defined as material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

- ☒ Description of primary packaging documenting compliance with the requirement.
- ☒ Multi-material hangers: Textile manufacturer's procedure, describing the take-back system for hangers.

O87 Information on recycling

The packaging shall carry information on how it can be sorted for recycling. This information shall be stated using text or symbols.

- ☒ Product label or artwork providing information on recycling.

3.14 Social and ethical requirements

O88 Mechanical and chemical distressing of denim

The following shall not be used:

- manual and mechanical sandblasting or sanding of denim.
- potassium permanganate (CAS no. 7722-64-7) for the treatment of denim fabrics/products, if used in open process.

- ☒ Declaration from the denim manufacturer stating the method used to treat the denim, plus a declaration that the requirement is fulfilled.

O89 Fundamental principles and rights at work

The licensee must ensure that all processes in the textile production; all dyeing plants, tanneries and cut-make-trim (CMT) factories (e.g. sewing factories) used in the manufacture of the licensed product(s) comply with:

- Relevant national laws and regulations
- The International Labour Organisation (ILO) Conventions below:

ILO Conventions:

1. Prohibition of forced labour (ILO Conventions Nos. 29 and 105)
2. Freedom of association, and protection of the right to organise and to conduct collective bargaining (ILO Conventions Nos. 87, 98, 135 and 154)
3. Prohibition of child labour (ILO Conventions Nos. 138, 182 and 79 plus ILO Recommendation No. 146)
4. No discrimination (ILO Conventions Nos. 100 and 111, UN Convention on the Elimination of All Forms of Discrimination against Women)
5. No violent treatment – Physical abuse or punishment, and threats of physical abuse are prohibited. The same applies to sexual or other forms of harassment
6. Workplace health and safety (ILO Convention No. 155 and ILO Recommendation No. 164)
7. Fair pay (ILO Convention No. 131)
8. Working hours (ILO Conventions Nos. 1 and 14)

Certification: The licensee of the production license shall submit either a valid certificate of a SA8000 certification, or other third-party verification of compliance with the requirement. This may be a BSCI audit report.

If the manufacturer is in the process of becoming SA8000 certified, this may be accepted under the following conditions: Final report from the certification body, including action plan with stated deadlines, submitted for assessment.

Brand owner procedures: The licensee of the brand owner license shall have written procedures in place to ensure compliance with the above conditions at all tanneries and cut-make-trim (CMT) factories used for the ecolabelled products.

Nordic Ecolabelling may withdraw the ecolabel licence, if the licensee no longer fulfils SA8000 or does not meet the stated deadlines in any action plans.

- ☒ **Production license:** SA8000 certificate or third-party verification of compliance with the requirement. E.g. a BSCI audit rapport.

- ☒ **Brand owner** shall submit and implement a procedure, for ensuring that the production facilities used for the ecolabelled products meet the requirement.

- ☒ **Brand Owner** shall submit a description of the Code of Conduct in place with its subcontractors.

3.15 Quality and regulatory requirements

O90 Control and assessment of suppliers

The requirement includes both the brand owner license and a production license.

The licensee shall submit an annual follow-up of its own subcontractors to Nordic Ecolabelling, which contain the following, as a minimum:

- Written documentation must be obtained annually showing that the responsible person at subcontractors who perform all or part of the textile production is familiar with the Nordic Swan Ecolabelling's requirements for the relevant processes and understands how the supplier can ensure compliance with these.
- An annual confirmation shall be submitted describing that only subcontractors approved on the license are used for the production of the Nordic Swan Ecolabelled textile. At the same time a list of the subcontractors used for the production of the Nordic Swan Ecolabelled textile shall be submitted.

Changes in the production such as replacement of subcontractors, fibre raw materials or chemicals shall be approved by Nordic Ecolabelling before the change is initiated in production. See requirement O94 Planned changes for procedure for this.

The licensee shall submit documentation stated in the requirement annually to Nordic Ecolabelling. Documentation for each year of the validity of the license must be kept by the licensee.

- ☒ The licensee shall submit documentation annually showing that the subcontractor's responsible person is familiar with the relevant Nordic Swan Ecolabelling requirements.
- ☒ Licensee must annually submit confirmation that only subcontractors and raw materials approved for the license are used. As well as provide a list of the subcontractors used.

O91 Responsible person and organisation

The company (both the holder of the production license and the holder of the brand owner license) shall appoint an individual who are responsible for ensuring the fulfilment of the Nordic Swan Ecolabelling requirements, for marketing and for finance, as well as a contact person for communications with Nordic Ecolabelling.

- ☒ Organisational chart showing who is responsible for the above.

O92 Documentation

The licensee shall archive the documentation that is sent in with the application, or in a similar way maintain information in the Nordic Ecolabelling data system.

- 🔍 Checked on site as necessary.

O93 Quality of the product

The licensee must guarantee that the quality of the Nordic Swan Ecolabelled product does not deteriorate during the validity period of the licence.

- ☒ Procedures for archiving claims and, where necessary, dealing with claims and complaints regarding the quality of the Nordic Swan Ecolabelled product.

- 🔍 The claims archive is checked on site.

O94 Planned changes

Written notice must be given to Nordic Ecolabelling of planned changes in products and markets, that have a bearing on Nordic Ecolabelling requirements.

- ☒ Procedures, of both the holder of the production license and the holder of the brand owner license, detailing how planned changes in products and markets are handled.

O95 Unplanned nonconformities

Unplanned nonconformities that have a bearing on Nordic Ecolabelling requirements must be reported to Nordic Ecolabelling in writing and journaled.

- ☒ Procedures detailing how unplanned nonconformities are handled.

O96 Traceability

The licensee shall be able to trace the Nordic Swan Ecolabelled product in the production. A manufactured / sold product should be able to trace back to the occasion (time and date) and the location (specific factory) and, in relevant cases, also which machine / production line where it was produced. In addition, it should be possible to connect the product with the actual raw material used.

- ☒ Description of/procedures for the fulfilment of the requirement.

O97 Legislation and regulations

The licensee shall ensure compliance with all applicable local laws and provisions at all production facilities for the Nordic Swan Ecolabelled product, e.g. with regard to safety, working environment, environmental legislation and site-specific terms/permits.

- ☒ Duly signed application form.

4 Areas without requirements

Awaits.

Regulations for the Nordic Ecolabelling of products

When the Nordic Swan Ecolabel is used on products the licence number shall be included.

More information on graphical guidelines, regulations and fees can be found at www.svanen.se/regulations/ or at www.nordic-ecolabel.org/regulations/

Follow-up inspections

Nordic Ecolabelling may decide to check whether the textile, skin or leather fulfils Nordic Ecolabelling requirements during the licence period. This may involve a site visit, random sampling or similar test.

The licence may be revoked if it is evident that textile, skin or leather does not meet the requirements.

Random samples may also be taken in-store and analysed by an independent laboratory. If the requirements are not met, Nordic Ecolabelling may charge the analysis costs to the licensee.

Criteria version history

Nordic Ecolabelling adopted version 5.0 of the criteria for XX on DAY MONTH YEAR. The criteria are valid until DAY MONTH YEAR.

Appendix 1 Analysis and test laboratories

Requirements on the analysis laboratory (all)

The analysis laboratory/test institute must be competent and impartial.

The analysis laboratory used shall fulfil the general requirements of standard EN ISO 17025 or have official GLP status.

The applicant's analysis laboratory/test procedure may be approved for analysis and testing if:

- sampling and analysis is monitored by the authorities, or
- the manufacturer's quality assurance system covers analyses and sampling and is certified to ISO 9001 or
- the manufacturer can demonstrate agreement between a first-time test conducted at the manufacturer's own laboratory and testing carried out in parallel at an independent test institute, and the manufacturer takes samples in accordance with a fixed sampling schedule.

Appendix 2 Azo dyes and Carcinogenic aromatic amines

Carcinogene aromatic amines	CAS no
4-aminodiphenyl	92-67-1
Benzidine	92-87-5
4-chlor-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-amino-azotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-chloraniline	106-47-8
2,4-diaminoanisol	615-05-4
4,4'-diaminodiphenylmethane	101-77-9
3,3'-dichlorbenzidine	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'-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-Xylidine	95-68-1
2,6-Xylidine	87-62-7
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4
2-amino-5-nitroanisoie	97-52-9
m-nitroaniline	99-09-2
2-amino-4-nitrophenol	99-57-0
m-phenylenediamine	108-45-2
2-amino-5-nitrothiazole	121-66-4
2-amino-5-nitrophenol	121-88-0
p-aminophenol	123-30-80
p-phenetidine	156-43-4
2-methyl-pphenylenediamine; 2,5diaminotoluene	615-50-9
2-methyl-pphenylenediamine; 2,5diaminotoluene	95-70-5
2-methyl-pphenylenediamine; 2,5diaminotoluene	25376-45-8
6-chloro-2,4-dinitroaniline	3531-19-9