Nordic Ecolabelling for

Paper Products – Chemical Module



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Nordic Ecolabelling

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AI002 Paper Products – Chemical Module, 05 October 2020

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:

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The Nordic Ecolabelling Modular System for Paper Products

Nordic Swan Ecolabelled paper products may be made of cellulosic fibres from wood, plants and/or recycled fibre. The criteria for Nordic Ecolabelling of paper products encompass a wide range of requirements, most of which relate to pulp and paper production. Since the raw materials, chemicals and manufacturing processes in pulp and paper production are similar, Nordic Ecolabelling has introduced a so-called modular system for paper products.

The Basic Module contains general requirements concerning forestry management, emissions, energy use and waste disposal with regard to pulp and paper production.

The Chemical Module contains general requirements with regard to the use of chemicals in the manufacture of pulp and paper.

Supplementary Modules contain those requirements, with regard to specific paper products, which must be fulfilled in order to grant a licence for the products to carry the Nordic Swan Ecolabel. The requirements' levels in a Supplementary Module may be more stringent or more lenient than those of the Basic or Chemical Module. If the requirements in the modules differ, the requirement levels specified in the applicable Supplementary Module are to be applied.

For a product to be granted a licence to carry the Nordic Swan Ecolabel, the relevant requirements in the Basic Module and Chemical Module, in addition to the requirements in the applicable Supplementary Module, must be fulfilled.

Version 3 of the modular system includes the following documents:

- Basic Module (Paper Products – Basic Module)
- Chemical Module (Paper Products – Chemical Module)

And following Supplementary Modules

- Copy and Printing Paper
- Grease-Proof Paper
- Tissue Paper

Other Nordic Swan Ecolabel criteria may refer to the modular system, such as the Criteria for Disposables for Food and the Criteria for Sanitary Products.

What is Nordic Swan Ecolabelled paper?

The Nordic Swan Ecolabel on a paper product signifies that the product meets strict environmental requirements. This means that the paper has minimal environmental impact throughout its lifecycle.

Paper assessed by Nordic Ecolabelling:

- Is either made of virgin fibres or and/or recycled fibres. At least 70% of fibres used in paper must come from sustainably managed forests or be recycled.
- Meets strict requirements concerning chemicals that are hazardous to health and harmful to the environment.
- Is manufactured in an energy efficient way.
- Generates less emissions to air and water during production.

Documentation

Each requirement is marked with the letter O and a number. Each requirement is followed by a symbol that describes how the requirement shall be documented.

To document the requirements, the manufacturer or supplier shall use Nordic Ecolabelling's web-based application tool My Swan Account (MSA). My Swan Account can be accessed via the internet addresses shown on page 2 of this document or via http://www.nordic-ecolabel.org/portals/paper/my-swan-account1/

In the case documentation is required in the form of a safety data sheet, such documentation must be in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC) for each chemical product.

All information submitted to Nordic Ecolabelling will be treated confidentially.

Definitions

Term	Explanation or definition
Azo dyes	Azo dyes, which by reductive cleavage of one or more azo groups may release one or more of the aromatic amines listed in Regulation (EC) No 1907/2006 Annex XVII, Appendix 8.
Chemical	Please see "Production chemical".
Chemical product	Please see "Production chemical".
Dye	Colourant substance that is dispersed in a medium in which it is soluble. Used as colourant in paper colourants. This definition is based on EuPIA:s definition.[1]

[1] https://www.eupia.org/fileadmin/user_upload/181031_Standard_Glossary_of_Food_Contact_Material_Inks_and_Coatings_Terms.pdf

External waste water treatment	External wastewater treatment plant is the plant on site where wastewater is treated before discharge to recipient. This is not to be mixed with wastewater treatment done by an external part such as municipal wastewater treatment plant. See also internal water treatment.
Impurities	Residuals, pollutants, contaminants etc. from production, including production of raw materials that remain in the chemical product in concentrations less than 1000 ppm (0,1000 w-%, 1000 mg/kg). Examples of impurities are residues of the following: residues or reagents incl. residues of monomers, catalysts, by-products, scavengers, and detergents for production equipment and carry-over from other or previous production lines.
Ingoing substances	All substances in the chemical product, including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g. formaldehyde and arylamine) are also regarded as ingoing substances.
Internal water treatment	Internal water treatment means processes on site where process water is treated between different processes and thereafter water is recycled within the production plant. See also external wastewater treatment.
Microplastics	Microplastic means particles with a size of below 5 mm of insoluble macromolecular plastic, obtained through one of the following processes: (a) a polymerisation process such as polyaddition or polycondensation or a similar process using monomers or other starting substances; (b) chemical modification of natural or synthetic macromolecules; (c) microbial fermentation.
Nanomaterials/-particles	Nanomaterials/-particles are defined according to EU commission recommendation on the definition of nanomaterial (2011/696/EU)[2]: 'Nanomaterial' means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm

[2] https://eur-lex.europa.eu/legal-content/SV/TXT/PDF/?uri=CELEX:32011H0696&from=EN

Naturally occuring inorganic minerals	Minerals used in production of pulp and paper, e.g. as a filler or as a coating or in wastewater treatment. Applies to naturally occurring inorganic minerals as defined in Annex V, clause 7 of REACH. Examples are bentonite, calcium carbonate, kaolin and talc.
Paper colourants	Product sold by a manufacturer that is used for printing, dyeing, shading or colouring of paper or pulp.
Pigment	Organic or inorganic substances dispersed in a medium, in which it is insoluble. It is used as colourant in paper colourants. This definition is based on EuPIA:s definition. (See footnote 1.)
Production chemical	The term production chemical, as used in this document, is a collective term for chemical products used during production. It can refer to chemical additives, auxiliary chemicals and process chemicals.
Raw material	In the Chemical Module, raw material refers to ingoing raw materials in production chemicals.
Sizing	Sizing means the process of increasing the paper's resistance to the penetration of liquids such as inks or to increase the surface strength of paper. Starch is for example one of the most commonly used materials for sizing.
VOC	Volatile organic compounds are defined in accordance with the European Commission's directive 1999/13/EC on the limitation of emissions of volatile organic compounds with vapor pressure > 0.01 kPa at 20°C.

1 Chemical requirements

The chemical requirements apply to **production chemicals** used in the production of pulp and paper and to **chemicals used in the conversion of the paper**. The requirements are applied regardless of the manufacturing method.

Many production chemicals are used in the manufacture of pulp and paper products. These may be categorised into process chemicals for pulp production as well as chemical additives and auxiliary chemicals for paper production. The term "production chemicals", as used in this document, is a collective term for products used during production of pulp and paper. It can refer to chemical additives, auxiliary chemicals and process chemicals.

1.1 Production chemicals out of scope

The requirements do not apply to the chemicals listed in Table 2 in Appendix 1. These include e.g.:

- Ordinary pulp cooking and bleaching chemicals, including process chemicals produced on-site.
- Mineral chemicals used as fillers or coating on paper or in wastewater treatment.

Furthermore, the requirements do not apply to chemicals used for:

- Treatment of raw water.
- Energy production, such as chemicals used in treatment of cooling water and boiler water.
- Maintenance during production stops. However, chemicals that are used continuously in production, such as felt washing agents, are regarded as production chemicals.
- Wastewater treatment lying outside the control of the pulp or paper manufacturer as a treatment done by an external part such as municipal wastewater treatment plants. Chemicals used in external water treatment plants operated by the pulp or paper manufacturer are not exempted from the requirements, see also external/internal water treatment in the list of definitions.
- Trials in pulp and paper manufacturing for no longer than 10 days during a period of, at most, two months.

1.2 Definition of ingoing substances and impurities

Ingoing substances and impurities in chemical products are defined below and apply to all requirements in the Chemical Module, unless stated otherwise in the requirements:

- **Ingoing substances:** All substances in the chemical product, including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g. formaldehyde and arylamine) are also regarded as ingoing substances.

- **Impurities:** Residuals, pollutants, contaminants etc. from production, including production of raw materials that remain in the chemical product in concentrations less than 1000 ppm (0,1000 w-%, 1000 mg/kg).

Examples of impurities are residues of the following: residues or reagents incl. residues of monomers, catalysts, by-products, scavengers, and detergents for production equipment and carry-over from other or previous production lines.

1.3 Declaration of compliance

The manufacturer or supplier of the chemical product must demonstrate compliance with the requirements in the Chemical Module. Fulfilment of the requirements is documented primarily with the aid of declarations or test results from manufacturers/suppliers. Declarations are to be submitted with the aid of the web-based application tool.

Nordic Ecolabelling has the right to request manufacturers/suppliers of chemical products for information on the complete chemical composition of a production chemical when necessary, in order to check the contents of the product.

The manufacturer/supplier must inform Nordic Ecolabelling in the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements.

1.4 Requirements applicable to all production chemicals

The Nordic Ecolabelling's general requirements O1 and O2 are applied to all production chemicals used in production of pulp and paper.

The chemical manufacturer or supplier must demonstrate compliance with the requirements by duly completing each declaration in the web-based application tool.

O1 Classification of production chemicals

Production chemicals classified according to the risk phrases indicated in the table below must not be used in pulp and paper manufacture.

Table 1 Classification of production chemicals

Classification under CLP Regulation (EC) No 1272/2008		
Classification	**Hazard Class and Category Code**	**Hazard statement**
Hazardous to the aquatic environment	Aquatic Acute 1 Aquatic Chronic 1–3	H400 H410, H411, H412
Hazardous to the ozone layer	Ozone	H420
Acute toxicity	Acute Tox. 1, 2	H330, H310, H300
Specific target organ toxicity	STOT SE 1	H370
Carcinogenic*	Carc. 1A/1B Carc. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A/B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A/1B Repr. 2	H360, H361 H362

** The classifications concern all classification variants. For example, H350 also covers classification H350i.*

This requirement applies to production chemicals and not ingoing substances, see Definitions. The manufacturer of the chemical product is responsible for its' classification.

Please note that requirement O2 below applies to all production chemicals and may incur further restrictions.

Exemptions to the requirement are the following:

- Biocidal products. Please note that there is a separate requirement, O5, for biocidal products that may restrict their use further.
- Chemical products classified as Aquatic Chronic 3 H412 are exempted if classification is due to the presence of in-can preservatives.
- Peracetic acid (bleaching agent).
- Cationic polymers, if charge is the reason for classification.

Paper colourants classified as environmentally hazardous are exempted from the requirement if:

- classification of the paper colourant is due to the dye/pigment itself

  and
- dyes/pigments are fixed to fibres > 98%. The degree of fixation is calculated as the total retention of dyes / pigments on the fibres during the process.

The chemical manufacturer/supplier must demonstrate compliance with the requirement by duly completing the declaration in web-based application tool.

The chemical manufacturer/supplier must enclose safety data sheet in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC) for all chemical products.

If the exemption to paper colourants is applied, the chemical manufacturer/supplier and pulp/paper producer must verify how the requirements for the exemption are met by duly completing and signing Appendix 10 (chemical manufacturer/supplier) and Appendix 13 (pulp/paper producer) in the web-based application tool.

O2 Prohibited substances

The following substances must not be ingoing substances in chemical products used in the production of pulp and paper. For definition of ingoing substances and impurities, please refer to the beginning of this chapter.

- CMR substances – Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1 A/B or category 2.

  An exemption is made for titanium dioxide (CAS no. 13463-67-7), if it is in non-dusting form.

  Dichloroisopropanol (DCP) and chloropropanediol (CPD) formed from epichlorohydrin (ECH) in wet strength agents are exempted from this requirement. However, please note that these substances are further restricted in requirement O7.

- Substances on the Candidate List*
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)**
- Nanomaterials/-particles

  *An exemption is made for pigments, naturally occurring inorganic minerals, nanocellulose, synthetic amorphous colloidal silica*** and polymer dispersions. Please note that this exemption does not apply to nano-titanium dioxide.*

- Microplastics****
- Endocrine disruptors according to the following:
    - Substances that are considered to be potential endocrine disruptors in category 1 or 2 on the EU Commission's priority list of substances that will be further assessed for endocrine disrupting effects. https://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf (Appendix L, page 238 onwards)
    - Substances on the EU Member State Initiative "Endocrine Disruptor Lists", List I and List III. https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu and

      https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities

** The Candidate List can be found on the ECHA website: http://echa.europa.eu/candidate-list-table*

*** PBT and vPvB in accordance with the criteria in Annex XIII of REACH.*

**** This applies to synthetic amorphous colloidal silica (either unmodified or modified with aluminium/alumina and/or boron or dimethyl siloxane polymer). Other modifications can be approved after assessment by Nordic Ecolabelling.*

***** Please note that Nordic Ecolabelling is following the ECHA restriction proposal and its definition and reserve the right to change the definition above when the definition used in the restriction proposal is finalized. An appropriate transition period would be granted.*

The chemical manufacturer/supplier must demonstrate compliance with the requirement by duly completing the declaration in Appendix 3 in the web-based application tool.

1.5 Requirements applicable to specific production chemicals

Requirements applicable to specific chemicals are set with respect to the following production chemicals. Forms that are equivalent to declarations in this document are available in the web-based application tool:

- Cleaning agents and dispersants (Appendix 4)
- Deinking chemicals (Appendix 5)
- Biocidal products and slimicides (Appendix 6)
- Coating chemicals, retention agents and flocculants (Appendix 7)
- Wet strength agents (Appendix 8)
- Foam inhibitors/defoamers (Appendix 9)
- Paper colourants (Appendix 10)
- Adhesives (Appendix 11)
- Starch products, GMO (Appendix 12)
- Declaration from the pulp and paper manufacturer (Appendix 13)

O3 Cleaning agents and dispersants

Alkylphenol ethoxylates or other alkylphenol derivatives must not be added to cleaning agents or dispersants.

The chemical manufacturer/supplier must demonstrate compliance with the requirement by duly completing and signing Appendix 4 in the web-based application tool.

O4 Deinking chemicals

All surfactants used in deinking processes must be readily or inherently biodegradable.

Surfactants based on silicone derivatives are exempted from this requirement if sludge from the deinking process is incinerated.

Alkylphenol ethoxylates or other alkylphenol derivatives must not be added to de-inking chemicals.

The chemical manufacturer/supplier must report ingoing surfactants, stating complete names and CAS no. in accordance with Appendix 5 in the web-based application tool. The result of testing for biodegradation must be reported e.g. in a safety data sheet.

If the exemption to silicone derivatives is applied, the **pulp/paper producer** must certify how the requirements for the exemption are met by duly completing and signing Appendix 13 in the web-based application tool.

O5 Biocidal products and slimicides

Active organic substances in biocidal products used for countering slime-forming organisms in pulp and paper production must be approved or under evaluation according to regulation (EU) No 528/2012 and they must not be bioaccumulative.

Biocides/slimicides are deemed not to be bioaccumulative if BCF < 500 or logKow < 4. If both values are available, the value for the highest measured BCF is to be used, see Analyses and Test Methods in Appendix 2.

The chemical manufacturer/supplier must report biocides/slimicides, stating their complete name and CAS no. in accordance with Appendix 6 in the web-based application tool.

Test results on the bioaccumulation potential of the active substances must be reported e.g. in safety data sheets.

O6 Coating chemicals, retention agents and flocculants

The following substances must not be added to coating chemicals, retention agents and flocculants:

- Alkylphenol ethoxylates or other alkylphenol derivatives
- Bisphenol A, F and S

Please note that the paper producer must also verify that Bisphenol A, F and S are not used in production of the paper.

The chemical manufacturer/supplier must demonstrate compliance with the requirement by duly completing and signing Appendix 7 in the web-based application tool.

The **paper manufacturer/supplier** must verify that the requirement for bisphenol A, F and S is met by duly completing and signing Appendix 13 in the web-based application tool.

O7 Wet strength agents

Alkylphenol ethoxylates or other alkylphenol derivatives must not be added to wet strength agents.

Wet strength agents must not contain more than 100 ppm (0.01%) in total of the low molecular organochloride compounds epichlorohydrin (ECH), dichloroisopropanol (DCP) and chloropropanediol (CPD) – calculated on the basis of the dry matter content.

The manufacturer/supplier of organochloride wet strength agents must certify that the requirement is fulfilled by duly completing and signing Appendix 8 in the web-based application tool.

O8 Foam inhibitors and defoamers

Alkylphenol ethoxylates or other alkylphenol derivatives must not be added to foam inhibitors and defoamers.

None of the ingoing substances in the foam inhibitor/defoamer that have a foam inhibiting or foam retarding effect may be classified as H400, H410, H411, H412 and H420.

As an alternative, 95 w% of the ingoing substances in the foam inhibitor/defoamer with a foam inhibiting or foam retarding effect must be either readily or inherently biodegradable.

Foam inhibitors/defoamers that are destroyed in chemicals recycling are exempted from this requirement.

The chemical manufacturer/supplier of a foam inhibitor/defoamer must demonstrate compliance with the requirement by duly completing and signing Appendix 9 in the web-based application tool.

If foam inhibitors/defoamers consist of a mixture of substances, each ingoing substance that have a foam inhibiting or foam retarding effect must be stated with its full name, CAS no. and concentration. The result of testing for

biodegradability of the individual substances must be reported for example in safety data sheets and with a completed Appendix 9 in the web-based application tool.

If the exemption to foam inhibitors/defoamers destroyed in chemicals recycling is applied, the **pulp/paper producer** must certify how the requirements for the exemption are met by duly completing and signing Appendix 13 in the web-based application tool.

O9 Paper colourants – metals

Dyes or pigments in paper colourants that are based on aluminium, silver, arsenic, barium, cadmium, cobalt, chromium, copper, mercury, manganese, nickel, lead, selenium, antimony, tin or zinc must not be used for dyeing, shading, colouring or printing.

Copper in phthalocyanine pigment and aluminium in aluminosilicates are exempted from this requirement.

The levels of ionic impurities in the paper colourants used must not exceed the following limits:

- Antimony: 50 ppm
- Arsenic: 50 ppm
- Barium: 100 ppm
- Cadmium: 20 ppm
- Chromium: 100 ppm
- Cobalt: 500 ppm
- Copper: 250 ppm
- Lead: 100 ppm
- Mercury: 4 ppm
- Nickel: 200 ppm
- Selenium: 20 ppm
- Silver, 100 ppm
- Tin: 250 ppm
- Zinc: 1 500 ppm.

The manufacturer/supplier must demonstrate compliance with the requirement by duly completing and signing Appendix 10 in the web-based application tool.

O10 Paper colourants – amines and phthalates

Azo dyes, which by reductive cleavage of one or more azo groups may release one or more of the aromatic amines listed in Regulation (EC) No 1907/2006 Annex XVII, Appendix 8, must not be used.

Phthalates must not be present in the paper colourants used.

The producer/supplier must demonstrate compliance with the requirement by duly completing and signing Appendix 10 in the web-based application tool.

O11 Adhesives

Adhesives used in the production or conversion of the product must not contain the following ingoing substances:

- Alkylphenol ethoxylates or other alkylphenol derivatives
- Phthalates
- Halogenated volatile organic compounds.
- Ethylene glycol ethers classified as any of the classifications listed in Table 1 in requirement O1.

The requirement is not applicable to sizing.

The chemical manufacturer/supplier must demonstrate compliance with the requirement by duly completing and signing Appendix 11 in the web-based application tool.

O12 Starch – GMO

Starch used in production must not derive from genetically modified organisms (GMOs), e.g. certain potato and maize starches.

Starch refers to cationic starches used e.g. in surface sizing.

The chemical manufacturer/supplier of the starch product must demonstrate compliance with the requirement by duly completing and signing Appendix 12 in the web-based application tool.

Appendix 1 Chemicals exempted from the requirements

Chemicals exempted from all requirements in the Chemical Module

The chemicals listed in Table 2 below are exempted from all of the requirements in the Chemical Module, meaning they are also exempted from the documentation requirement. The requirements do not apply to e.g.:

- ordinary pulp cooking and bleaching chemicals including process chemicals produced on-site.
- mineral chemicals used as fillers or coating on paper or in wastewater treatment.

These bulk chemicals shall not be registered in Nordic Ecolabelling's web-based application tool. Further chemicals may be exempted after assessment by Nordic Ecolabelling.

Table 2 Bulk chemicals exempted from all requirements

- Aluminium ferrous sulphate
- Aluminium sulphate
- Ammonia
- Ammonium nitrate
- Bentonite
- Burnt lime
- Carbon dioxide
- Chlorine dioxide
- Clay or calcium carbonate used as fillers or coating on paper
- DTPA
- EDTA
- Ferric sulphate
- Ferrous sulphate
- Hydrochloric acid
- Hydrogen peroxide
- Magnesium oxide
- Magnesium hydroxide
- Magnesium sulphate
- Methanol
- Mineral chemicals such as kaoline
- Oxygen
- Ozone
- Peracetic acid
- Phosphoric acid
- Polyaluminium chloride
- Sodium bicarbonate
- Sodium bisulphate (sodium hydrogen sulphate)
- Sodium bisulphite
- Sodium borohydride
- Sodium dithionite
- Sodium hydrosulphide
- Sodium hydroxide
- Sodium hypochlorite
- Sodium silicate
- Sodium sulphite
- Sulphur
- Sulphuric acid
- Sulphur dioxide
- Talc
- Urea

Exempted production chemicals per requirement

O1 - Classification of production chemicals

The following exemptions are applied:

- Biocidal products. Please note that there is a separate requirement, O5, for biocidal products that may restrict their use further.
- Chemical products classified as Aquatic Chronic 3 H412 are exempted if classification is due to the presence of in-can preservatives.
- Peracetic acid (bleaching agent)
- Cationic polymers, if charge is the reason for classification.

Paper colourants classified as environmentally hazardous and/or STOT RE 1 H372 are exempted from the requirement if:

- classification of the paper colourants is due to the dye/pigment itself
  and
- dyes/pigments are fixed to fibres > 98%. The degree of fixation is calculated as the total retention of dyes / pigments on the fibres during the process.

O2 - Prohibited substances

The following exemptions are applied:

- CMR substances

  An exemption is made for titanium dioxide (CAS no. 13463-67-7), if it is in non-dusting form.

  Dichloroisopropanol (DCP) and chloropropanediol (CPD) formed from epichlorohydrin (ECH) in wet strength agents are exempted from this requirement. However, please note that these substances are further restricted in requirement O7.

- Nanomaterials/-particles

  *An exemption is made for pigments, naturally occurring inorganic minerals, nanocellulose, synthetic amorphous colloidal silica*** and polymer dispersions. Please, note that this exemption does not apply to nano-titanium dioxide.*

  ****Please note that this applies to synthetic amorphous colloidal silica (either unmodified or modified with aluminium/alumina and/or boron or dimethyl siloxane polymer). Other modifications can be approved after assessment by Nordic Ecolabelling.*

O4 - Deinking chemicals

The following exemption is applied:

- Surfactants based on silicone derivatives are exempted if sludge from the deinking process is incinerated.

O8 - Foam inhibitors and defoamers

The following exemption is applied:

- Foam inhibitors/defoamers that are destroyed in chemicals recycling are exempted.

O9 – Paper colourants - metals

The following exemption is applied:

Copper in phthalocyanine pigment and aluminium in aluminosilicates are exempted.

Appendix 2 Analyses and test methods

Aerobic biodegradability

Test methods 301 A-F or 310 in the OECD Guidelines for the Testing of Chemicals (ISBN 92-64-1222144) must be used to test ready biodegradability. As an alternative, ISO 10708 (BODIS test) can be used.

Test methods 302 A-C in the OECD Guidelines for the Testing of Chemicals must be used to test inherent biodegradability.

Bioaccumulation

A substance is considered bioaccumulating if tested for bioaccumulation on fish according to method OECD 305 A-E and its bioconcentration factor (BCF) is <500. If no BCF value has been determined, a substance is considered bioaccumulating if its logKow value < 4.0 according to method 107, 117 or 123 in the OECD Guidelines for the Testing of Chemicals (ISBN 92-64-1222144) or equivalent method, unless proven otherwise. If both values are available, then the BCF value should be used. This means that if the maximum measured BCF < 500, the substance is not considered bioaccumulating even if logKow < 4.0.

OECDs test method 107 cannot be used for surface-active substances, which are both fat and water soluble. Based on current knowledge, for such substances it must be shown to a high degree of certainty that the substance itself and its decomposition products do not pose a long-term hazard to aquatic organisms.

Data models (such as BIOWIN) are permitted but if the results of an approximation are close to the set limit values or if Nordic Ecolabelling holds contradictory information, more reliable information is required.

Aquatic toxicity

Acute aquatic toxicity is tested with the aid of test methods nos. 201, 202 and 203 in OECD guidelines for testing of chemicals (ISBN 92-64-1222144) or equivalent test methods.

For chronic aquatic toxicity test methods nos. 210, 211, 215 and 229 in the OECD Guideline for the Testing of Chemicals (ISBN 92-64-1222144) or equivalent test methods are used. OECD 201 can be used as chronic test if chronic endpoints are chosen.

Appendix 3 Prohibited substances (O2)

Product name
Function
Manufacturer/supplier

Ingoing substances and impurities are defined below, unless stated otherwise in the requirements:

- **Ingoing substances:** All substances in the chemical product, including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g. formaldehyde and arylamine) are also regarded as ingoing substances.

- **Impurities:** Residuals, pollutants, contaminants etc. from production, including production of raw materials that remain in the chemical product in concentrations less than 1000 ppm (0,1000 w-%, 1000 mg/kg).

Examples of impurities are residues of the following: residues or reagents incl. residues of monomers, catalysts, by-products, scavengers, and detergents for production equipment and carry-over from other or previous production lines.

O2: Does the product contain any of the following substances? Please note the definition of ingoing substances and impurities above.				
CMR substances – Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1 A/B or category 2. *An exemption is made for titanium dioxide (CAS no. 13463-67-7), if it is in non-dusting form.* *Dichloroisopropanol (DCP) and chloropropanediol (CPD) formed from epichlorohydrin (ECH) in wet strength agents are exempted from this requirement. However, please note that these substances are further restricted in requirement O7.*	Yes	☐	No	☐
Substances on the Candidate List (SVHC), ECHA webpage: http://echa.europa.eu/candidate-list-table	Yes	☐	No	☐
Substances that have been judged in the EU to be PBT (persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative), in accordance with the criteria in Annex XIII of REACH.	Yes	☐	No	☐
Nanomaterials/-particles *Note: An exemption to the requirement is made for pigments, natural occurring inorganic minerals, nanocellulose, synthetic amorphous colloidal silica* and polymer dispersions. Please note that nano-titanium dioxide is not exempted from the requirement.* ** This applies to synthetic amorphous colloidal silica (either unmodified or modified with aluminium/alumina and/or boron or dimethyl siloxane polymer). Other modifications can be approved after assessment by Nordic Ecolabelling.*	Yes	☐	No	☐
Microplastics	Yes	☐	No	☐

Endocrine disruptors according to: • Substances that are considered to be potential endocrine disruptors according to the EU commission's Endocrine Disruptor priority list, category 1 and 2, or future priority lists of the EU commission. https://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf (Appendix L, page 238 onwards) • Substances that have been identified by the Danish Centre on Endocrine Disrupters (CeHoS) as fulfilling or likely fulfilling the WHO definition of an endocrine disruptor. • http://www.cend.dk/files/DK_ED-list-final_2018.pdf (table 8 and 13), or later publications • Substances that have been identified as endocrine disruptors according to the scientific criteria in the Biocidal Products Regulation (EU 2017/2100) or Plant Protection Products Regulation (EU 2018/605), respectively. • Substances that have been identified as endocrine disruptors by ECHA's ED Expert Group: https://echa.europa.eu/fi/ed-assessment	Yes ☐ No ☐

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and concentration (in ppm, % by weight or mg/kg). Also state whether the substance is contained in the form of an impurity or as an added substance.

_____

_____

_____

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 4 Cleaning agents and dispersants (O3)

Product name
Function
Manufacturer/supplier

Have alkylphenol ethoxylates or other alkylphenol derivatives been added to the cleaning agent or dispersant? Yes ☐ No ☐

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 5 Deinking chemicals (O4)

Product name
Function
Manufacturer/supplier

List the names and CAS nos. of the surfactants present in the deinking chemical:

_____ _____

_____ _____

_____ _____

_____ _____

Are all the surfactants in the deinking chemical readily biodegradable according to test methods as stated in Appendix 2? Yes ☐ No ☐

If not, which surfactant(s) is/are not readily biodegradable?

_____ - _____

_____ - _____

Are these surfactants inherently biodegradable according to test methods as stated in Appendix 2? Yes ☐ No ☐

Test results must be provided by the supplier in the form of e.g. a safety data sheet that must be in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC).

Have alkylphenol ethoxylates or other alkylphenol derivatives been added to the deinking chemical? Yes ☐ No ☐

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 6 Biocidal products and slimicides (O5)

Product name
Function
Manufacturer/supplier

List the names and CAS nos. for the biocides present in the product:

_____ _____

_____ _____

_____ _____

_____ _____

Is the biocide approved or under evaluation according to regulation (EU) No 528/2012? Yes ☐ No ☐

Does product contain organic biocides? Yes ☐ No ☐

If yes, are the biocides bioaccumulative? Yes ☐ No ☐

Biocides/slimicides are deemed not to be bioaccumulative if BCF < 500 or logKow < 4. If both values are available, the value for the highest measured BCF is to be used, see Analyses and Test Methods in Appendix 2.

Test results must be provided by the supplier in the form of e.g. a safety data sheet that must be in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC).

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 7 Coating chemicals, retention agents and flocculants (O6)

Product name
Function
Manufacturer/supplier

Have alkylphenol ethoxylates or other alkylphenol derivatives been added to the coating chemicals, retention agent or flocculant? Yes ☐ No ☐

Have bisphenol A, F or S been added to the coating chemicals, retention agent or flocculant? Yes ☐ No ☐

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 8 Wet strength agents (O7)

Product name
Function
Manufacturer/supplier

Have alkylphenol ethoxylates or other alkylphenol derivatives been added to the wet strength agent? Yes ☐ No ☐

Does the wet strength agent contain any of the low molecular organochloride compounds epichlorohydrin (ECH), dichloroisopropanol (DCP) or chloropropandiol (CPD)? Yes ☐ No ☐

If yes, state the unambiguous chemical name, CAS number, relevant risk phrases and concentration.

_____ _____ _____ ppm based on dry content

_____ _____ _____ ppm based on dry content

_____ _____ _____ ppm based on dry content

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 9 Foam inhibitors and defoamers (O8)

Product name
Function
Manufacturer/supplier

Have alkylphenol ethoxylates or other alkylphenol derivatives been added to the foam inhibitor/ defoamer? Yes ☐ No ☐

Are any of the ingoing substances in the foam inhibitor/ defoamer that have a foam inhibiting or foam retarding effect classified as H400, H410, H411, H412 or H420? Yes ☐ No ☐

Are 95% by weight of the ingoing substances with foam reducing effect in foam inhibitors/defoamers:

- readily biodegradable? Yes ☐ No ☐

or

- inherently biodegradable? Yes ☐ No ☐

For test methods, please refer to Appendix 2.

State the ingoing substances, with foam reducing or defoaming effect, with name, CAS number and concentration:

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

Test results must be provided by the supplier in the form of e.g. a safety data sheet that must be in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC).

Foam inhibitors, which are destroyed in chemicals recycling, are exempted from this requirement.

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 10 Paper colourants (O9–O10)

Product name
Function
Manufacturer/supplier

Paper colourants (O1)

Is the exemption for dyes/pigments applied in requirement O1 (classification of ingoing substances as hazardous to the aquatic environment in accordance with Table 1 in requirement O1)? Yes ☐ No ☐

If yes, is the classification of the paper colourants due to the dye/pigment itself? Yes ☐ No ☐

If yes, specify how the conditions for the dye's / pigment's optimal fixation to fibres are met during the process:

_____

_____

Paper colourants, Metals (O9)

Are dyes or pigments in paper colourants based on aluminium, silver, arsenic, barium, cadmium, cobalt, chromium, copper, mercury, manganese, nickel, lead, selenium, antimony, tin or zinc? Yes ☐ No ☐

If yes, please specify the metal(s)?: _____

Copper in phthalocyanine pigment and aluminium in aluminosilicates are exempted from this requirement.

Ionic impurities (O9)

Do the levels of ionic impurities in the paper colourants exceed the following limits?		
Antimony: 50 ppm	Yes ☐	No ☐
Arsenic: 50 ppm	Yes ☐	No ☐
Barium: 100 ppm	Yes ☐	No ☐
Cadmium: 20 ppm	Yes ☐	No ☐
Chromium: 100 ppm	Yes ☐	No ☐
Cobalt: 500 ppm	Yes ☐	No ☐
Copper: 250 ppm	Yes ☐	No ☐
Lead: 100 ppm	Yes ☐	No ☐
Mercury: 4 ppm	Yes ☐	No ☐
Nickel: 200 ppm	Yes ☐	No ☐
Selenium: 20 ppm	Yes ☐	No ☐
Silver: 100 ppm	Yes ☐	No ☐
Tin: 250 ppm	Yes ☐	No ☐
Zinc: 1 500 ppm.	Yes ☐	No ☐

Amines and phthalates (O10)

Does the dye formulation contain dyes that can decompose to form any of the aromatic amines listed in Regulation (EC) No 1907/2006 Annex XVII, Appendix 8? Yes ☐ No ☐

Does the paper colourant contain phthalates? Yes ☐ No ☐

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 11 Adhesives (O11)

Product name
Function
Manufacturer/supplier

Do adhesives used in the production or conversion of the product contain:

- Alkylphenol ethoxylates or other alkylphenol derivatives? Yes ☐ No ☐
- Phthalates? Yes ☐ No ☐
- Halogenated volatile organic compounds? Yes ☐ No ☐
- Ethylene glycol ethers classified in accordance with Table 1 in requirement O1? Yes ☐ No ☐

Requirement to adhesives is not applicable to sizing.

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 12 Starch and GMO (O12)

Product name
Function
Manufacturer/supplier

We hereby declare that the above-mentioned starch product is not derived from genetically modified material.

Starch refers to cationic starches used e.g. in sizing.

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Manufacturer/supplier	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email

Appendix 13 Declaration regarding production chemicals from the pulp and paper manufacturer (O1, O4, O6 and O8)

Pulp and paper manufacturer

Paper colourants (O1)

Is the exemption for dyes/pigments applied in requirement O1 (classification of ingoing substances as hazardous to the aquatic environment in accordance with Table 1 in requirement O1)? Yes ☐ No ☐

If yes, specify how the conditions for the dye's / pigment's optimal fixation to fibres are met during the process?

_____

_____

Deinking chemicals (O4)

Are silicone derivatives used in deinking? Yes ☐ No ☐

If yes, specify the sewage treatment steps used in external wastewater treatment and verify that the sludge is incinerated.

_____

_____

Coating chemicals, retention agents and flocculants (O6)

Has bisphenol A, F or S been added to the paper? Yes ☐ No ☐

Foam inhibitors and defoamers (O8)

Are the foam inhibitors/defoamers destroyed in chemicals recycling? Yes ☐ No ☐

If yes, specify how these foam inhibitors/defoamers are destroyed in chemicals recycling.

_____

_____

We declare that the requirements have been met and that the information provided is correct. In the event of any change to validity of this declaration, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	
Pulp and paper manufacturer	Company name/stamp
Responsible person	Signature of responsible person
Telephone	Email