

Appendix 1 Chemicals and foils for foil printing and laminates

This declaration is used by suppliers of chemical products, foils for foil printing and laminate used in Nordic Swan Ecolabelled printing companies. The declaration must be completed in the Supply Chain Declaration Portal.

Note that the content of VOC together with item name (product name) and distributor/supplier will be published for printing companies, - either all of them if no confidentiality restriction is chosen and if confidentiality restriction only the companies with special permission.

Please complete the declaration for identification of the material(s)/chemical(s):

This declaration is based on the knowledge we have at the time of the application, based on tests and/or declarations from raw material manufacturers, bearing in mind new advances and new knowledge may emerge. Should such new knowledge arise that affects Nordic Ecolabelling's requirements, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Nordic Ecolabelling is entitled to seek information on the full chemical composition of the product from the chemical manufacturer/supplier in order, where necessary, to check the content of the product.

Country	Distributor/supplier	Trade name*	Product number, where applicable
Internationally			
Sweden			
Norway			
Iceland			
Finland			
Denmark			

* The trade name may, for example, be a series of inks or some other designation comprising a number of trade names. For example, "Printing ink series xxxx", where xxxx represents a number of variants in the series of printing inks. Information about toner and ink must – in addition to the name of the toner/ink – include details of the machine for which it is used, e.g., Toner xxx for yyy (where yyy is the name of the printing machine).

☒ Enclose safety data sheets in accordance with the current statutory requirement in the country of application, e.g., Annex II to REACH (Council Regulation (EC) no. 1907/2006) for all chemical products.

Type of product:

☐ Printing ink and additives: ☐ Dampening solution additive

Printing ink used in offset and flexo printing. Printing ink also includes metallic ink and ink additives that are mixed into the printing ink. Production aids such as anti-drying agents that are designed to prevent the ink vessel drying

out overnight, or spraying powder, are not regarded as ink additives.

☐ Toner:

☐ Algicide

Toner powder (e.g. used in laser printing, photocopying), dry toner, wet/liquid toner also known as ready-to-use electroInk/liquid electrophotography (LEP). Imaging-oil/-agent, recycle agent, electroInk/primer shall be declared separately.

☐ Ink:

☐ Adhesive

Ink used in digital printing, e.g. Inkjet printing.

☐ Varnish

☐ Repro-chemical

☐ Washing agent

☐ Foil for foil printing

☐ Laminate applicable for paper/printed paper

☐ Adhesive used in manufacturing of paper board/corrugated board

☐ Chemicals used for coating in manufacturing of paper board/corrugated board:

Chemical coating is a covering applied to the surface of the paper board/corrugated board such as colour, varnish or a coating to obtain waterproof or antistatic properties.

Printing method in which the product is used:

☐ Sheet fed offset (not envelopes)

☐ Coldset, newspapers

☐ Heatset rotation

☐ Digital printing/photocopying

☐ Flexographic printing (not envelopes)

☐ Coldset, forms

☐ Coldset rotation (not forms/newspapers)

☐ Envelope production with flexographic printing

1 General requirements for chemicals

According to Nordic Ecolabelling's overall principles, the Nordic Swan Ecolabel must be a powerful tool that works to phase out substances that are hazardous for the environment and health. Official regulations (classification, labelling, official lists, and regulation) are used to exclude substances and products that are hazardous for the environment and health. As the Nordic Swan Ecolabel is an ecolabel, the requirements in the criteria are more stringent than legislation.

This entails that the chemical may be prohibited from Nordic Swan Ecolabelled services and products, even though it is permitted under the authorities' regulations. The precautionary principle is the starting point when substances are suspected of having serious environmental and health impacts.

Requirements in the Nordic Ecolabelling criteria are set e.g., for the classification of chemical products as well as ingoing substances in the chemical product.

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 (0.100 w-%, 1000 mg/kg).

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

1.1 Classification of production chemicals

Production chemicals classified according to the risk phrases indicated in the table below must not be used in the production of printed matter.

Foil for foil printing shall only meet the following areas for declaration: 1.2 Prohibited substances, 2.1 Residues of heavy metals and 2.2 Azo dyes.

Laminates applicable for printed matter out of paper shall only meet the following areas for declaration: 1.2 Prohibited substances (incl. adhesive and/or coating part of the foil) and 2.3 laminates used to enhance and protect the printed matter.

Is the production chemical classified in accordance with the table below?

Yes ☐ No ☐ If Yes, please specify:

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 1-4	H400 H410, H411, H412, H413
Hazardous to the ozone layer	Ozone	H420
Acute toxicity	Acute Tox. 1 or 2 Acute Tox. 3	H330, H310, H300 H331, H301, H311
Specific target organ toxicity	STOT SE 1 STOT RE 1	H370 H372
Respiratory or skin sensitisation	Resp. Sens. 1 Skin Sens 1	H334 H317
Carcinogenic*	Carc. 1A or 1B	H350

	Carc. 2	H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact	H360 H361 H362

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

Note that the manufacturer of the chemical product is responsible for its classification.

Exemptions:

- Repro chemicals (repro) classified as Aquatic Chronic 2-3 H411 or H412 or Skin Sens 1 H317.
- UV-curing printing inks, UV inkjet inks, UV inkjet varnishes, UV varnishes, UV adhesives and UV primers classified as: Aquatic Acute 1 H400, Aquatic Chronic 1-4 H410, H411, H412 or H413 or Resp. Sens 1 H334 or Skin Sens 1 H317.
- Production chemicals classified as Carc 2, H351 if the classification is due to the presence of titanium dioxide (CAS No. 13464-67-7).
- Production chemicals classified as Repr. 1, H360 and/or Repr. 2, H361 and/or STOT RE 1 H372 are exempted if the classification is due to the presence of photoinitiators and/or acrylates.

The exemption only applies if the classified production chemical is used/designed to be used in a closed printing system such as digital printing, where there is no direct contact/exposure between worker and the chemical. Traditional UV offset where the UV ink is transferred from open cans/pumped to an ink tray/application roller is considered an open system.

- Production chemicals classified as Skin Sens 1, H317 or Resp. Sens 1, H334 are exempted if used in closed printing systems*
- Flexographic printing ink classified as Skin Sens 1, H317 if the classification is due to the presence of isothiazolinones.
- **Algicides** classified as Aquatic Acute 1 H400, Aquatic Chronic 1-4 H410, H411, H412, H413.
- Dampening solution additives classified as Resp. Sens 1 H334 or Skin Sens 1 H317 or classified as Aquatic Chronic 2-3 H411 or H412 due to the presence of isothiazolinones or Iodopropynyl Butyl Carbamate (IPBC), if diluted according to the manufacturer's recommended dosage making the solution not classifiable.
- 2-component adhesives classified as Resp. Sens 1 H334 or Skin Sens 1 H317.

* *Closed systems include: washing agents, algicides and ink, toner, varnishes used in digital printing.*



Enclose safety data sheets in accordance with the current statutory requirement in the country of application, e.g., Annex II to REACH (Council Regulation (EC) no. 1907/2006) for all chemical products.

1.2 Prohibited substances

The following substances must not be ingoing substances in chemical products used in the production of printed matter:

Does the production chemical contain the following ingoing substances?

Yes ☐

No ☐

If Yes, please specify:

- EDTA (Ethylenediaminetetraacetic acid) and its salts
 - An exemption is made for EDTA and its salts if the proportion of EDTA and its salts does not exceed 1% (percentage by weight) in the chemical product.
- Sodium and calcium hypochlorite
- Perfluorinated and polyfluorinated alkylated compounds
 - An exemption is made for non-declared dry toner used in the printing company. However, the exemption does not apply for Nordic Swan Ecolabelled printed matter. The exemption applies until 30. June 2025.
 - An exemption is made for non-declared wet toner and latex ink. However, the exemption does not apply for Nordic Swan Ecolabelled printed matter. The exemption applies until 30. June 2025.
- Halogenated organic substances
 - Isothiazolinones may be present in the chemical product at a total level of not more than 500 ppm (0.05% by weight)****.
 - Iodopropynyl Butyl Carbamate (IPBC) may be present in the chemical product at a total level of not more than 2000 ppm (0.2% by weight).
 - Acid products (pH<6) may contain bronopol if the content of bronopol in the final product does not exceed 2500 ppm (0,25% by weight).
 - Halogenated pigments may be used provided the total extractable level of polychlorinated biphenyls (PCB's) does not exceed 50 ppm.
 - Chlorinated phenols may be present in sublimation dye inks if the following threshold values are fulfilled (mg/kg)***:
 - Pentachlorophenol (PCP): 0,05
 - Terachlorophenols (TeCP):0,05
 - Trichlorophenols (TrCP): 0,2
 - Dichlorophenols (DCP): 0,5
 - Monochlorophenols (MCP): 0,5
- Isothiazolinones
 - The chemical product must not contain more than 500 ppm (0.05% by weight) isothiazolinones.
- APEO – alkylphenol ethoxylates and alkylphenol derivatives (substances that release alkylphenols on degradation)
- BHT - butylhydroxytoluene
 - An exemption is made for BHT in UV-curing printing inks, UV inkjet inks, UV inkjet varnishes, UV varnishes and UV primers if the proportion of BHT does not exceed 0.3% (3000 ppm) in the chemical product. If BHT is given a harmonized classification which means that the substance does not meet the requirements of the criteria document, the exception will be waived.
 - An exemption is made for BHT in offset printing inks if the proportion of BHT does not exceed 0.2% (2000 ppm) in the chemical product. If BHT is given a harmonized classification

which means that the substance does not meet the requirements of the criteria document, the exception will be waived.

- Substances on the Candidate List*
 - An exemption is made for Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide (TPO)" with CAS 75980-60-8.
- CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1 A or B or category 2
 - An exemption is made for titanium dioxide (CAS no. 13463-67-7) classified as Carc 2, H351 and Trimethylolpropane (TMP, CAS no. 77-99-6) classified as Repr. 2, H361.
 - An exemption is made for acrylates, classified as Repr. 1, H360 and/or photoinitiators classified as Repr. 2, H361. (The exemption only applies if the classified production chemical is used/designed to be used in a closed printing system such as digital printing, where there is no direct contact/exposure between worker and the chemical. Traditional UV offset where the UV ink is transferred from open cans to an ink tray/application roller is considered an open system).
 - An exemption is made for methylene diphenyl diisocyanate (MDI) in polyurethane glue (PUR) classified as Carc 2, H351.
 - An exemption is made for Trimethylolpropane triacrylate (TMPTA) with CAS 15625-89-5 classified as Carc 2, H351.
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)**.
- Substances on the EU member state initiative "Endocrine Disruptor Lists", List I, List II and List III. See the following links:

List I: <https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu>

List II: <https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption>

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

Regarding List I, II and III: a substance which is transferred to one of the corresponding sublists called "Substances no longer on list", and no longer appears on any of List I-III, is no longer excluded. The exception is those substances on sublist II which were evaluated under a regulation or directive which doesn't have provisions for identifying EDs (e.g., the Cosmetics Regulation, etc.). For those substances, ED properties may still have been confirmed or suspected. Nordic Ecolabelling will evaluate the circumstances case-by-case, based on the background information indicated on sublist II.

** 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*

**** Documentation: valid Oeko Tex - Eco Passport certificate*

***** The 500 ppm limit does not apply to production chemicals classified as:*

a) Repr. 1, H360 and/or Repr. 2, H361 and/or STOT RE1 H372 due to the presence of photoinitiators designed to be used in closed printing systems such as digital printing and

b) Skin Sens 1, H317 and/or Resp. Sens. 1, H334 due to the presence of isothiazoliones, designed to be used in closed printing systems such as digital printing.

1.3 Volatile organic compounds VOC

The printing company is awarded points depending on the purchased quantity of chemicals consisting of or containing volatile organic compounds (VOC).

Organic compounds are defined in accordance with European Commission's Directive 2010/775/EC: "volatile organic compound" means any organic compound as well as the fraction of creosote, having at 293,15 K a vapour pressure of 0,01 kPa (at 20°C) or more, or having a corresponding volatility under the particular conditions of use". This is verified from the safety/technical data sheet from the manufacturer.

If a chemical only partially contains VOC, the weight percentage of the VOC components is indicated as the VOC content. If a washing agent for example contains two VOC components, A and B, and the rest is water: 20% A and 45% B, the VOC content will be 65%.

In the case of wet toner, the manufacturer or supplier must, in order to simplify the VOC calculation, declare two versions of the same toner using fixed values of 15% and 30%. The lower value (15 %) is applied to digital printing machines with condensation followed by recycling. The higher value (30 %) is applied when the equivalent recycling technique is missing. The following should be stated when declaring the wet toner series or a single wet toner e.g.: " Wet toner trade name CMYK version i.ii, Light Magenta, Light Cyan for series X, Y and Z ". The word "series" in this example refers to the make of the printing press.

In the case of heatset inks, the manufacturer or supplier must as standard assume that the heatset ink contains 0% VOCs due to heating kiln treatment at the printing company or external incineration under controlled conditions. In the case of other production chemicals, information verified from safety data sheets must be used (highest value if a range is shown).

Does the chemical contain VOC? Yes ☐ No ☐

If yes, specify percentage by weight of VOC in the chemical:_____

2 Specific requirements for printing inks, toners, inks, varnishes, foil for foil printing and laminated applicable for printed matter

2.1 Residues of heavy metals

Dyes or pigments based on antimony, arsenic, barium, cadmium, chromium VI, cobalt, copper, lead, mercury, nickel, or selenium shall not be intentionally used in printing inks, toners, inks, varnishes, foils for foil printing and laminates applicable to printed matter.

Copper in phthalocyanine pigment is exempted from this requirement.

The levels of ionic impurities in the dyes or pigments used must not exceed the following limits:

- Antimony: 50 ppm
- Arsenic: 50 ppm
- Barium: 100 ppm

- Cadmium: 20 ppm
- Chromium VI: 100 ppm
- Cobalt: 500 ppm
- Copper: 100 ppm
- Lead: 100 ppm
- Mercury: 4 ppm
- Nickel: 100 ppm
- Selenium: 20 ppm

Do the printing inks, toners, inks, varnishes, foils for foil printing or laminates applicable to printed matter comply with the requirement?

Yes ☐ No ☐ If No, please specify:

2.2 Dye products, Amines

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.

Do the printing inks, toners, inks, varnishes, foils for foil printing or laminates applicable to printed matter comply with the requirement?

Yes ☐ No ☐ If No, please specify:

2.3 Laminates used to enhance and protect the printed paper matter

Laminates/film lamination used to enhance and protect the printed matter must not contain:

- PVC
- Coatings which can have an antiviral-/antibacterial effect

Silver compounds, nano silver and nano gold are also considered antibacterial/-viral substances.

Does the laminate used to enhance and protect printed matter contain PVC or coatings which can have an antiviral-/antibacterial effect?

Yes ☐ No ☐ If Yes, please specify:

2.4 Recyclability and deinkability - Printing inks, toners, inks, varnishes and adhesives

This requirement only applies to printing inks, toners, inks, varnishes, and adhesives designed and intended to use on paper/paper-based substrates.

Printing inks, -toners, -ink and varnishes:

Oil/solvent based (hydrophobic) printing inks, -toners, -inks and varnishes (e.g., standard offset inks, inks for rotogravure and dry toners) are exempted from this requirement.

Water based (hydrophilic) and crosslinked printing inks, -wet toners, -inks and -varnishes (e.g., flexo, inkjet, liquid toner, UV curable, Liquid electrophotography (LEP) must:

- be tested in accordance with INGEDE's test method no. 11 and obtain a result of above 0 points in accordance with EPRC's points system for all tested paper types. This corresponds to "Tolerable deinkability" or
- prove repulpable according to PTS method PTS-RH 021/97 or Aticelca 501:2019 evaluation system or
- prove repulpable without any reservations according to a deinking mill or paper recycling plant/mill evaluation system.

Adhesives:

Water based adhesives, non-soluble hot melt adhesives and non-redispersible hot melt adhesives are exempted from this requirement.

Adhesives must

- be tested in accordance with INGEDE's test method no. 12 and obtain a result of above 0 points in accordance with EPRC's points system for all tested paper types. This corresponds to "Tolerable deinkability/removability" or
- prove repulpable without any reservations according to a deinking mill or paper recycling plant/mill evaluation system

The requirements concerning test laboratories and test instructions, INGEDE testing are stated in section 3 below.

- ☒ Water based (hydrophilic) and crosslinked printing inks printing inks, wet toners, inks, and varnishes: The chemical manufacturer/supplier shall provide:
 - the test result of INGEDE test method no. 11 and the point score in accordance with EPRC's points system for all tested paper types or
 - the result(s) of test report(s) proving repulpability according to the PTS method PTS-RH: 021 or ATICELCA 501:2019 evaluation system or
 - declaration from a deinking mill or paper recycling plant/mill proving repulpability without any reservations according to their evaluation system.
- ☒ Adhesives: The chemical manufacturer/supplier shall provide the test result of INGEDE test method no. 12 and the point score in accordance with EPRC's points system for all tested paper types or
- ☒ Adhesives: declaration from a deinking mill or paper recycling plant/mill proving repulpability without any reservations according to their evaluation system.

3 Analyses and test methods

Testing of quality specifications must be performed by laboratories, which are accredited to the current standard and fulfil the general requirements in the standard EN ISO/IEC 17025 or have official GLP status. A non-accredited laboratory may perform tests if the laboratory has applied for accreditation according to the current testing method, but has not yet been granted approval, or if accreditation is not available for the technical specification or proposed standard. In such cases, the laboratory must prove that it is an independent, competent laboratory.

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

- Sampling and analysis are 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

3.1 Test methods for deinkability and recyclability

Printing inks, -toners, -inks, varnishes, and adhesives

DEINKABILITY:

Water based (hydrophilic) and crosslinked printing inks, -wet toners, -inks and -varnishes (e.g., flexo, ink-jet, liquid toner, UV curable, Liquid electrophotography (LEP) must be tested in accordance with INGEDE's test method no. 11, and obtain a result of above 0 points in accordance with ERPC's points system for all tested paper types. This corresponds to "Tolerable deinkability".

Testing must be performed on two types of paper: uncoated and coated paper. If a type of printing ink is only sold for one or two specific types of paper, it is sufficient to only test the paper type(s) in question.

Adhesives must be tested in accordance with INGEDE's test method no. 12 and obtain a result of above 0 points in accordance with ERPC's points system for all tested paper types. This corresponds to "Tolerable" removability.

Water based adhesives, non-soluble hot melt adhesives and non-redispersible hot melt adhesives are not to be tested (exempted from this requirement).

Testing must be performed on a type of printed matter that is representative of the adhesive in question.

REPULPABILITY:

Water based (hydrophilic) and crosslinked printing inks, wet toners, -inks and -varnishes (e.g., flexo, inkjet, liquid toner, UV curable, Liquid electrophotography (LEP) must prove repulpable according to PTC method PTS-RH 021/97 or Aticelca 501:2019 evaluation system.

Testing must be performed on two types of paper: uncoated and coated paper. It must be stated if the paper is suitable for graphic- or packaging grade.

The test results/declaration may include a specific series of ink toners, -inks, -varnishes and adhesives (e.g., different colours) if the basic chemical property is the same.

Signature

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.

We understand that Nordic Ecolabelling will not be responsible for any data that is incorrectly recorded in the Nordic print database as a result of our failure to provide correct information:

Company name:	
Address:	
Telephone:	Date:
E-mail:	
Signature:	
Name in block letters:	

Please note that the signatory company will appear in the Nordic Ecolabelling Portal unless otherwise stated under distributor/supplier at the top of the form.

E-mail

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