

Nordic Ecolabelling for

Printing Companies, Printed matter, Envelopes and other Converted Paper Products



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Nordic Ecolabelling



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041 Printing companies, Printed matter, Envelopes and other Converted Paper Products, version 5.12, 21 December 2016.

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

Addresses

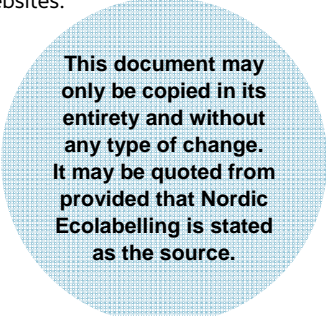
In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, The Nordic Swan Ecolabel. These organisations/companies operate The Nordic Swan Ecolabelling system on behalf of their own country's government. For more information, see the websites:

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What is a Nordic Swan Ecolabelled printing company/printed matter?

A Nordic Swan Ecolabelled printing company is a company that fulfils strict environmental requirements and has been granted a Nordic ecolabel licence to produce printed matter. Nordic Swan Ecolabelled printed matter is printed matter, such as a brochure, a book or an envelope, with environmentally-friendly properties.

The printing company's production process has a very low environmental impact when compared with other printing companies. The requirements apply mainly to the printing process, including paper consumption, and the paper and chemicals used by the printing company. The Nordic Swan Ecolabel also rewards production processes that facilitate the recycling of printed matter.

Applying the requirements will help the printing company to control its general environmental impact. The aim is to exploit resources as efficiently as possible and to replace substances that are harmful to health and the environment with better alternatives.

The Nordic Swan Ecolabelling requirements provide the printing company with guidelines on how to contribute to sustainable development.

Why choose The Nordic Swan Ecolabel?

- Environmental issues are often complex and learning about them can take time. The Nordic Swan Ecolabel can be used as a guide in this process.
- A business that maintains focus on environmental work will also be able to reduce its financial costs for waste and paper (in the form of reduced waste paper quantities).
- The Nordic Swan Ecolabel constitutes a cost-effective and simple tool for communicating the environmental work of a business.
- The printing company may use The Nordic Swan Ecolabel in its marketing.
- The Nordic Swan Ecolabel is a widely known ecolabel that enjoys a high level of credibility.

What is eligible for The Nordic Swan Ecolabel?

The Nordic Swan Ecolabel applies to **a printing company's** * production of **printed matter**. Printing material used by the printing company must generally comprise **paper** in accordance with requirement O1. The printing methods must be one or several of those mentioned in Section 5 (Counting-up of points).

The printing company is at liberty to choose which printed matter is to be Nordic Swan Ecolabelled (see however the requirement in Section 6.1).

Subject to agreement with Nordic Ecolabelling, printing companies may exempt the production of certain types of printed matter involving a specially demanding production process (e.g. security printing and questionnaires of pharmaceutical industry).

*Nordic Ecolabelling also includes the production process used by manufacturers of envelopes to produce paper **envelopes**. Envelopes with and without flexographic printing on the inside are covered by the **printing method** envelope flexography in this document. Envelopes with printing on the outside are encompassed by e.g. offset printing of envelopes or digital printing. Other printed matter without printing (e.g. Post-it notes or note pads without printing) is encompassed by the same printing method as that used for printing the cover or another part of the printed matter.*

* **Red highlighting indicates that the term is explained in the section Terms and definitions.**

Who may apply for a licence?

Printing companies of all types may apply for a licence if printing makes up a substantial part of the business. In this document, the concept of printing also covers manufacturers of envelopes. Other businesses which are not printing companies and which want to obtain The Nordic Swan Ecolabel for their **printed matter** may apply for a licence for specific types of printed matter. This may be a **newspaper**, **book**, magazine, catalogue, **envelope** series or pads and booklets with a specific trademark. Even if the licence only applies to a specific item of printed matter, it must be printed at a Nordic Swan Ecolabelled printing company in accordance with requirement M12. Only these printing companies may market themselves as Nordic Swan Ecolabelled printing companies.

How to apply

The criteria for printing companies comprise a combination of mandatory requirements and a range of possibilities for scoring points. The mandatory requirements are labelled O + a number and must always be fulfilled. Other requirements, which are intended to ensure that the ecolabelling requirements are observed after a licence has been awarded, are labelled M + a number and are also mandatory.

Criteria for which points may be scored are labelled P + a number. In order to be granted a licence, a certain minimum number of points must be scored, depending on the type of printing methods used. The heading specifies the maximum number of points available (e.g. 10 points). Please note that applicants are free to choose in which areas they wish to score points.

The final section headed "Terms and definitions" contains definitions and explanations of the terms used in the document. The words for which explanations are provided are marked in **red** the first time they appear in the section.

Applications

Applications are to be submitted preferably with the aid of the electronic application aid on My Swan Account.

A full application consists of a completed application form and a completed electronic application aid with uploaded documentation. The application is to be submitted to Nordic Ecolabelling in the country in which the printing operation is conducted (see the addresses in the beginning of the document).

Applications from printing companies outside the Nordic region are to be sent to Nordic Ecolabelling in one of the Nordic countries according to agreement. Upon receipt of the completed application form Nordic Ecolabelling will grant the applicant access to the electronic application aid.

Applicants should specify on the application form for printing companies the type of printing they are expecting to offer by checking the boxes in the form (see table below), or alternatively by completing on the application form the unique trade names of office products and the like, such as envelopes, pads, booklets or the name of the item of printed matter (e.g. the Daily Journal, The Bumper Book of Recipes).

	Categories	Explanation
<input type="checkbox"/>	Copying	
<input type="checkbox"/>	Envelope production	
Printing:		
<input type="checkbox"/>	Periodicals	Magazines, journals, newsletters
<input type="checkbox"/>	Newspapers	Daily papers, weekly papers
<input type="checkbox"/>	Books	Books with hard or soft covers
<input type="checkbox"/>	Catalogues	Product catalogues, telephone directories,
<input type="checkbox"/>	Technical documents	Manuals, guides, instructions for use
<input type="checkbox"/>	Direct marketing material	Postcards, advertising leaflets, brochures, mail shots
<input type="checkbox"/>	Advertising and promotional material	Flyers, brochures, leaflets, circulars, signs, posters
<input type="checkbox"/>	Packaging and labels	Bags, boxes, labels
<input type="checkbox"/>	Financial reports	Annual reports, quarterly reports
<input type="checkbox"/>	Office products	Letter paper, envelopes, business cards, notepads
<input type="checkbox"/>	Forms	Forms
<input type="checkbox"/>	Other paper printed matter	Wrapping paper, greeting cards, calendars, posters

My Swan Account and electronic application aid

My Swan Account can be accessed via the internet addresses shown in the beginning of the document or via <http://www.nordic-ecolabel.org/portals/paper/printing-houses/apply>. My Swan Account contains the following:

- An electronic application aid for help in structuring documentation and performing calculations
- A database of inspected chemicals and materials, their VOC content and score where relevant
- A database containing inspected and Nordic Swan Ecolabelled paper grades
- A database containing inspected suppliers of finishing services

Applicants can request a password with limited validity for accessing My Swan Account to enable them to use the electronic application aid and information in connection with their application. When the licence enters into force, the validity of the password will be amended for licence holders so that it matches the term of the criteria document.

Symbols used in the text

For each requirement a description is provided of the way in which the requirement must be documented. Symbols are also used in order to facilitate the process.

☒ Indicates the documentation to be submitted.

Inspection on site

In connection with the granting of a licence Nordic Ecolabelling will inspect that the requirements are fulfilled on site. At these inspections, applicants must be able to present the background through calculations, technological solutions, chemicals and materials, invoices documenting purchases and the like to substantiate compliance with the requirements. Hence, a typical inspection visit will involve inspecting that the information provided in the application is in fact correct.

Costs

An application fee is payable in connection with licence applications. In addition, a user fee is payable. These fees are described on Nordic Ecolabelling's websites.

Questions

We would be happy to answer any questions about the requirements or the application process. Please contact Nordic Ecolabelling (see the addresses in the beginning of the document).

What requirements must be met in order for a Nordic Swan Ecolabel to be granted?

The following requirements must be fulfilled:

- All mandatory requirements must be fulfilled: O + number and M + number.
- In order to be awarded a licence, a minimum points level must be obtained for each **printing method**. The table in Section 5 "Counting-up of points" explains the required point scores. The final score for each printing method is rounded off to whole numbers: 81.4 => 81 points and 81.5 => 82 points.

Printers without own printing are affected by the requirements O1, O2 and O3 as well as all M requirements. Businesses which are not printers and which request a licence to print specific items of printed matter are affected by the requirements in Section 6.1.

1 General requirements

Mandatory requirements applicable to type of printing company

O1 Type of printing company

A) **The practising company** must give a brief account of the number of printing machines, the type of machine or model (e.g. heat set press, flexography machine), size (e.g. number of ink and varnish units), format (e.g. 48 pages) and machines for pre-press and potential finishing services.

B) **The printing material** used by the printer must primarily be **paper**, such that 75% of the printing company's turnover from paper printed matter and other printed matter altogether derives from paper **printed matter** manufactured with printing methods encompassed by the criteria.

Printing company offering other printed matter and services than paper printed matter and comprising more than 25% of the printing company's turnover can be Nordic Swan Ecolabelled if following conditions are met:

1. Part of printing company offering paper printed matter shall be separated as an own department with definitive name.
2. This department shall include all paper printed matter including large format, profile articles and other.
3. Department has separate sales and marketing for Nordic Swan Ecolabelled printing services and matter.
4. In sales and marketing of printing company's other department, it shall not be unclear that these services and products are not Nordic Swan Ecolabelled.

If, according to agreement with Nordic Ecolabelling, **the printing company** excludes printed matter that is subject to special production requirements (e.g. security printing – see the Section "What is eligible for The Nordic Swan Ecolabel" above), this will not be included in the 75%.

C) The practising company must calculate the output for each individual **printing method** and for the printing house as such. The output in tonnes per year is equal to annual **paper consumption** less the annual **waste paper** quantity. For details of how to calculate waste paper, see P2. If relevant, provide also description how potential adjustment of stock difference is done.

See how waste paper is allocated to the individual printing method if information is available only on total waste paper, Appendix 7. Note that the electronic application aid will perform the necessary calculations.

If a printing company uses a certain paper grade in several printing methods, the volumes for paper, may be estimated in relation to printing methods respectively.

The documentation must consist of a review in accordance with the requirements described above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

The following applies for printing company having several printing methods: if production for separate printing method comprises at maximum 5% of the total production in printing company (e.g. digital printing), this method can be included as part of the larger method in the printing company.

If envelopes are printed on offset machines shall envelopes be included as part of the sheet offset method (and not calculated as an own method). If packaging is printed on offset machines shall packaging be included as part of the sheet offset method (and not calculated as an own method). Packaging offset shall not exceed 50% of sheet offset in the printing company.



Complete the electronic application aid in My Swan Account by entering:

A)

- A brief description of the number of printing machines, the type of machine or model (e.g. heat set press, flexography machine), size (e.g. number of ink and varnish units), format (e.g. 48 pages) and
- Machines for pre-press and potential finishing services.

B)

- A statement to the effect that the printing company only prints on paper, or, if a printer also prints on other printing material, the total printing turnover and turnover from paper printed matter.
- Details of any other type of printing material and paper used.
- Documentation for material of sales and marketing of The Nordic Swan Eco-labelled department in the printing company.

C)

- The practising company's total annual paper consumption, and paper consumption for each individual printing method and description how potential adjustment of stock difference is done.
- Waste paper for each individual printing method, however, alternatively, total waste paper at practising company as well as an annual specification or the like from the recipient documenting the quantity of waste paper disposed of, or details of how the waste paper was weighed.
- If exception for maximum 5% of the total production is applied, document printing methods which are derogated from the requirement and enclose documents verifying that the procent share is maximum 5% of the total production in the printing company. If envelopes are printed on offset machines, state the procent proportion of envelopes on sheet offset. If packaging is printed on offset machines, state the procent share of packaging on sheet offset and enclose documents verifying that the packaging shall not exceed 50% of sheet offset in the printing company.

2 Suppliers

The applicant must document the supplier requirements for the **printing company** as a whole, i.e. not for each individual printing method.

Mandatory requirements applicable to suppliers of print and finishing services

O2 Suppliers of printing services

At least 75% of all printing on **paper** in-house by the **practising company** and **printing** of the **printing company's printed matter** externally by **suppliers**, must be by Nordic Swan Ecolabelled printing companies.

The percentages must be calculated on the basis of total paper consumption (tonnes) in-house and paper consumption (tonnes) by suppliers on an annual basis or on the basis of an assessment using financial figures.

The documentation must consist of a calculation in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete the electronic application aid in My Swan Account by selecting Nordic Swan Ecolabelled print suppliers from a list and specifying the quantities (tonnes of paper) sent to print suppliers.

O3 Chemical finishing services

At least 90 weight per cent of the chemical finishing, in-house at the **practising company** as well as out-of-house by **suppliers**, must be inspected (calculated as a total as all categories receive finishing treatment). Chemical finishing involves adhesives, varnishing, **foil** blocking or laminating, as well as addressing with printing inks or toners on printed matter or its package. An “inspected supplier” of finishing services is inspected by Nordic Ecolabelling and complies with the requirements of Appendix 4.

The percentage share is calculated on the basis of the number of tonnes of **paper** for in-house chemical finishing and tonnes of paper for externally inspected finishing, i.e. non-inspected chemical finishing treatment, on an annual basis or on the basis of an assessment using financial figures. See requirement for calculation using financial figures in P2 and the example in Appendix 7. The practising company need not secure inspection of out-of-house finishes if only 5% or less of all orders undergo chemical finishing, which is calculated as paper used in relation to total paper consumption. However, see requirements as to out-of-house finishing of Nordic Swan Ecolabelled printed matter in requirement M12.

For a supplier with finishing services to be registered in My Swan Account, the supplier must complete and submit the declaration in Appendix 4. The completed declaration may be submitted directly to Nordic Ecolabelling.

The documentation must consist of a calculation in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete the electronic application aid in My Swan Account by selecting inspected finishers from a list and specifying quantities.

3 Environmental requirements

The applicant must document the environmental requirements applicable to the **practising company** and to each **printing method** individually with the exception of the requirements and score options specified below. If it proves difficult to determine **waste paper** and **energy consumption** separately for each individual printing method, these may be calculated based on the practising company's total value for waste paper and or energy consumption with the aid of the instructions contained in Appendix 7. The electronic application aid will perform all these calculations.

Requirements for pressure-sensitive adhesives (O6), plastic packaging and laminates (O7) and waste plan (O10) must be documented for the printing company as a whole.

In the case of adhesives (P4), the quantity of mixed waste (P12), water consumption (P15), print quality (P16), energy efficiency measures and carbon dioxide emissions (P10) and ecolabelled goods and services (P13), the applicant may calculate the score for the printing company as a whole and allocate this point score to each of the individual printing methods.

All key figures expressed in tonnes of product (e.g. VOC consumption in kg per tonne of product) are related to the practising company's output in accordance with O1. Depending on what is encompassed by the requirement or the option for scoring points, this applies either to the printing company's total output of printed paper products or the output of printed paper products with individual printing methods.

Mandatory paper requirements

O4 Inspected/ecolabelled paper

At least 25% of the **paper consumption** for each individual **printing method** in a weighted calculation must be **inspected** or **ecolabelled**. In this calculation, Nordic Swan Ecolabelled paper has a weight of 1, inspected paper 0.8 and EU ecolabelled paper 0.7.

Example: If 35% inspected paper is used in addition to 5% Nordic Swan Ecolabelled paper and 5% EU ecolabelled paper, the calculation will be as follows:

$$35*0,8 + 5*1,0 + 5*0,7 = 36,5\%$$

If only a single type of paper is used, 25% Nordic Swan Ecolabelled paper or 31.25% inspected paper or about 35.7% EU ecolabelled paper will be required for the requirement to be fulfilled.

In order for a paper grade to be inspected and recorded in My Swan Account, the paper mill must document compliance with the requirements using Appendix 5. Nordic Swan Ecolabelled paper is automatically recorded in My Swan Account.

The documentation must consist of a calculation in accordance with the requirement above and reports/lists from the paper suppliers stating quantities purchased and grades during the year. Please follow the instructions under P1 regarding the electronic application aid in My Swan Account when preparing the application.



See P1.

Points for choice of paper (25 points in total)

P1 Inspected/ecolabelled paper

Each individual **printing method** may be awarded points depending on the quantity of **inspected/ecolabelled paper** used.

Use the formula below to calculate points for inspected/ecolabelled paper on an annual basis for each printing method. The quantity of inspected/ecolabelled paper is weighted in such a way that Nordic Swan Ecolabelled paper has a weight of 1, inspected paper 0.8 and EU ecolabelled paper 0.7.

A paper quality can only count once (the highest weighting applies if, for instance, the paper is both Nordic Swan Ecolabelled and EU ecolabelled at the same time. The weighting is based on differences between the stringency of the requirements.

Total points for choice of paper: points for paper can be weighted by factor 1,5.

Inspected paper is non-Nordic Swan Ecolabelled paper, which is inspected by Nordic Ecolabelling and meets the requirements contained in Appendix 5.

score = $1/3 * \text{weighted percentage share inspected/ecolabelled paper} - 25/3$
however not less than 0 points

Example: If 35% inspected paper is used in addition to 5% Nordic Swan Ecolabelled paper and 5% EU ecolabelled paper, the calculation will be as follows:

$$1/3 * (35 * 0.8 + 5 * 1.0 + 5 * 0.7) - 25/3 = 3.8 \text{ points}$$

Table P1 Example of points (rounded off)

Percentage share	Only Nordic ecolabelled	Only inspected	Only EU ecolabelled
100	25	18.3	15
55	10	6.3	4.5
25	0	0	0

In order for a paper grade to be inspected and recorded in My Swan Account, the paper mill must document compliance with the requirements using Appendix 5. Nordic Swan Ecolabelled paper is automatically recorded in My Swan Account.

The documentation must consist of a calculation in accordance with the above option for scoring points and reports/lists from the paper suppliers stating quantities purchased and grades during the year. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete the electronic application aid in My Swan Account by selecting paper from a list, specifying quantities and uploading reports/lists from paper suppliers detailing the quantities and grades purchased during the course of the year. Upload also valid licence documentation for EU ecolabelled paper if the paper is not already available in the list for selection. Valid licence documentation consist of contract's Annex including trade names or valid certificate including trade names.

Points for waste paper (10 points in total)

P2 Waste paper

Each individual **printing method** may be awarded points depending on the quantity of the **waste paper**.

Use the following formula for calculating points for waste paper:

$$\text{point} = 10/35 \cdot (40 - \text{percentage share waste paper})$$

however not more than 10 points

Calculate the **waste paper** percentage for the **printing method** on the basis of the weight specified on the invoice from the recipient of waste paper, or by weighing the waste paper at the **practising company** in relation to the **paper consumption** on an annual basis. Waste paper generated in connection with external finishing must also be included in the calculation.

If the printer uses multiple methods of printing and does not calculate the waste paper generated by each method separately, the method for allocating waste paper in Appendix 7 must be used. The allocation is calculated automatically when entered in My Swan Account.

Waste paper from external finishing covers waste paper from finishers encompassed by O3 as well as waste paper from finishers that only perform mechanical finishing treatment.

If all finishing is performed externally, the waste paper of the printing company must be multiplied by two in order to produce a figure for total waste paper, unless the printer can show that some other figure applies for waste paper generated by external bookbinders.

If the printing company both performs finishing in-house and uses the services of an external finisher, only the waste paper deriving from the production that is finished externally must be multiplied by two, unless the printing company can demonstrate a different figure. The work sent for external finishing must be specified on the basis of the total weight of the paper consumed in the externally finished production or calculated on the basis of financial figures. If financial figures are used, the cost of finishing must be specified as 8% of total turnover.

Example: For a waste paper percentage of 25%, the calculation will be as follows:

$$10/35 \cdot (40 - 25) = 4.29 \text{ point}$$

See also the example of calculating waste paper in cases in which the printer uses external finishing in Appendix 7.

Table P2 Example of points (rounded off)

Waste paper percentage	Points
5% or less	10
10%	9
20%	6
30%	3
40%	0

The documentation must consist of a calculation in accordance with the above option for scoring points as well as an annual specification or the like from the recipient documenting the quantity of waste paper disposed of, or details of how the waste paper was weighed. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Complete the electronic application aid in My Swan Account by entering quantity of waste paper and the quantity of paper purchased for orders that are finished externally. Furthermore, a copy of invoices or annual report from the recipient documenting the quantity of waste paper disposed of must be uploaded, or details on how the waste paper was weighed.

3.1 Chemicals and materials

Mandatory chemical and material requirements

O5 Chemicals and materials

Chemicals and materials in the categories, **foils for foil printing**, laminates, varnishes, **adhesives**, **printing inks**, **toners** and **inks***, **washing agents**, **dampening solution additives** (e.g. alcohol), **algicides** and other **chemicals for film and form production** used by the **practising company** must be inspected by Nordic Ecolabelling and must fulfil the requirements in Appendix 1.

**Addressing with ink is exempted from the requirement and is also applied to out-of-house chemical finishing services. For addressing ink, safety data sheet complying with the standards set out in Annex II of REACH (Regulation 1907/2006/EC) or other technical data sheet has to be enclosed.*

Chemicals that are purchased separately and added to these chemicals at the printers must also be included. The quantity of washing agents in any pre impregnated washing cloths must be calculated on the basis of the information provided by the supplier on the quantity of washing agent by weight or area and the total quantity of washing cloths.

In the case of foils, laminates, varnishes, adhesives, printing inks, toners and ink, at least 95 weight per cent of annual purchases/incoming quantities in each category and printing method must fulfil the requirements. Printing inks, toners and ink are included within the same category. For printing inks, adhesives and varnishes an alternative triviality limit of 10 kg per annum and per category and printing method applies for which the requirements do not have to be met.

In the case of washing agents, dampening solution additives and algicides, as well as other reprochemicals, 95 weight per cent of annual purchases/incoming quantities in each category and printing method must fulfil the requirements. Algicides and other reprochemicals count as one single category. Furthermore, an alternative triviality limit of 0.1 kg per tonne of product in each category and printing method applies for these type of chemicals, which does not have to fulfil the requirements.

If a chemical or material is used in relation to more than one printing method, the printing company may add up the quantities in the relevant category across the printing methods and on this basis calculate fulfilment of the triviality limits (e.g. adhesives).

Adjustments can be made for chemicals/materials purchased/received during the course of the year but not used by uploading stocktake figures as at the end of the year for the individual chemical/material.

The practising company's stores may contain a maximum of 5 per cent by weight of old chemicals/materials which do not meet the requirements calculated in relation to annual purchases in each individual category and printing method. Old chemicals are chemicals purchased/received in the period prior to the latest annual report.

My Swan Account contains details of inspected chemicals and materials.

To have a chemical recorded in My Swan Account the supplier or manufacturer of the chemical/material must complete and submit the declaration contained in Appendix 1. The completed declaration may be submitted directly to Nordic Swan Ecolabelling.

The documentation must consist of a description in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Complete the electronic application aid in My Swan Account by selecting the chemicals from a list, specify chemicals and materials not recorded in My Swan Account. Enter quantities and upload reports/lists from suppliers detailing trade names and the quantities purchased during the course of the year. Upload calculations to explain any adjustments based on stock counts. Chemical and material suppliers must use electronic application aid for suppliers in My Swan Account for inspection of chemicals and materials.

06 Pressure-sensitive adhesives

Pressure-sensitive adhesives, used for example on envelopes, must not damage the recycling process. The adhesive must be tested in accordance with INGEDE's test method no. 12.

Pressure sensitive adhesives used on laminates, for mounting, or on labels or stickers are not encompassed by the requirement.

In order for a pressure-sensitive adhesive to be registered in My Swan Account, a test report must be submitted showing "good" or "fair" removal or adhesive in accordance with ERCF's point system based on INGEDE's test method no. 12 (see instructions in Section 3 of Appendix 1).

The documentation must consist of a test report in accordance with the requirement outlined above. The adhesive must be tested on a representative type of envelopes. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Complete the electronic application aid in My Swan Account by selecting adhesives from a list.

07 Plastic packaging and laminates

Packaging and laminates for use on **printed matter** made of **paper** must not contain PVC. This requirement does not apply to printed paper products for use in especially challenging environments (e.g. for outdoor use and in automotive workshops).

The documentation must consist of the completed and signed declaration in Appendix 6. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Upload a copy of the duly completed and signed Appendix 6 in the electronic application aid in My Swan Account.

Points for types of chemicals (20 points in total)

Applicants may allot a total of up to 20 points for P3-P6, based on the types of **chemicals** encompassed by requirement O5 used for each **printing method**.

If a chemical is used in relation to more than one printing method, the printing company may add up the quantities in the relevant category across the printing methods and on this basis calculate a points sum and allocate this sum to all the printing methods involved (e.g. adhesives).

P3 Printing inks, varnishes, toners and inks

Points awarded for **printing inks, varnishes, toners or inks** apply to those used in the different **printing methods** by the **practising company**, and in the case of varnishes also those used by suppliers of finishing services encompassed by requirement O3.

Printing inks, varnishes, toners or inks are not used	12
Printing inks, varnishes, toners or inks are used (see points for the various types in Appendix 1)	0-12
Not inspected printing inks, varnishes, toners or inks are used, i.e. use up to the triviality limit	0

If several types are used, the score is calculated on the basis of a weighting of purchased quantities (weight on an annual basis). Whatever part of the production is not printed (calculated on the basis of paper consumption) must be weighted with 12 points if the applicant wishes points to be allotted for this factor.

For example, if the total consumption of printing inks and varnishes includes 70% vegetable inks, 10% mineral and 20% UV varnish, and in addition has 20% printed paper products without colour, varnish, toner or ink, the score will be $0.80 \cdot (0.7 \cdot 10 + 0.1 \cdot 7 + 0.20 \cdot 1) + 0.20 \cdot 12 = 8.72$ point.

External and internal finishing with varnishing is weighted with the aid of the quantity of paper used in printed matter and sent to the various finishers and the quantity of paper used in printed matter varnished internally. If the finisher has been inspected and uses varnishes with different points, the varnish with the lowest number of points will be used for the allocation.

The documentation must consist of a calculation in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



See O5. The quantity of paper for that part of the production which is not to be printed must be entered in My Swan Account, if the applicant wishes points to be allotted for this factor. The quantity of paper for that part of the production which is varnished at external finishers must be entered in My Swan Account.

P4 Adhesives

Points allotted for **adhesives** apply to adhesives used by the **practising company** and by suppliers of finishing services encompassed by requirement O3.

Adhesives are not used	3
Adhesives are used (see points for the various types in Appendix 1)	1-3
Not inspected adhesives are used, i.e. use up the triviality limit	0

Adhesive for laminates and adhesive for foils for foil printing is exempted from the calculation. If several types are used, the points are calculated on the basis of a weighting of the quantity of adhesive purchased (in weight on an annual basis). Whatever part of the production is not glued (calculated on the basis of paper consumption) must be weighted with 3 points if the applicant wishes points to be allotted for this factor.

External and internal finishing with gluing is weighted with the aid of the quantity of paper used in printed matter and sent to the various finishers and the quantity of paper used in printed matter which is glued internally.

If the finisher has been inspected and uses adhesives with different points, the adhesive with the lowest number of points will be used for the allocation. Zero points are obtained if the external finisher is not inspected.

The documentation must consist of a calculation in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



See O5. The quantity of paper for that part of the production which is glued at external finishers must be entered in My Swan Account or alternatively, qualified estimate of the share of the production that is not glued.

P5 Washing agents

Points allotted for **washing agents** apply to washing agents used in the different **printing methods** by the **practising company**.

Washing agents are not used	3
Washing agents are used (see points for the various types in Appendix 1)	0-2,5
Not inspected washing agents are used, i.e. use up to the triviality limit	0

If several types of washing agents are used, the points are calculated on the basis of a weighting of the quantities purchased/received (in weight on an annual basis).

The documentation must consist of a calculation in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



See O5. If a part of the production does not use washing agents, please register this in My Swan Account in order to score points for this.

P6 Dampening solution additives

Points allotted for **dampening solution additives** apply to dampening solution additives used in the different **printing methods** by the **practising company**.

Dampening solution additives are not used	2
Dampening solution additives are used (see points for the various types in Appendix 1)	0-1
Not inspected dampening solution additives are used, i.e. use up to the triviality limit	0

If several types are used, points are calculated on the basis of a weighting of purchased/received quantities (weighted on an annual basis). Whatever part of production in a printing method which does not involve the use of dampening solution additives must be weighted with 2 points, if the applicant wishes points to be allocated for this factor.

The documentation must consist of a calculation in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



See O5. If a part of the production does not use dampening solution additives, please enter the share of this in My Swan Account based on the quantity of paper consumed in order to score points for this.

3.2 Film and printing form production — repro

Points for technology used in repro (3 points in total)

P7 Film and printing form production for the printing method

Each individual printing method may be awarded points depending on the technology used in repro.

Use of technology without the use of film and printing form (e.g. digital printing and photocopying):	3 points
Use of technology without the use of film or chemicals, for example algi-cides , developers, finishers or rinsing water (e.g. process-free computer to plate without development neither in nor outside the printing machine):	2 points
Use of technology without the use of film and with a maximum chemical use, including use of rinsing water, of 1.0 kg per tonne of product per year for removal without release into the sewage system.	1 point
Other technology	0 points

Equipment used in proofreading is not regarded as part of the production process.

*If several types of technology are used for the same **printing method**, points are allocated for the worst technology. Alternatively points may be weighted in relation to paper consumption in the various repro technologies on an annual basis. If the practising company does not have their own equipment, points may be allotted for the external repro supplier that is used most frequently.*

The documentation must consist of a report in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Complete the electronic application aid in My Swan Account by selecting technologies from a list and entering the quantities of paper consumed for the various technologies used. A calculation of the quantity of chemicals and rinsing water used must be uploaded if the applicant wishes points to be allotted for this.

3.3 Emissions to air and water

Points for volatile organic compounds – VOC (20 points)

The **practising company** may award a maximum of 20 points as regards purchases/receipt of **chemicals** encompassed by O5 (**washing agents**, **printing inks**, alcohol, other **dampening solution additives** etc.) depending on the content of volatile organic compounds (**VOC**) and depending on whether there are systems for the collection/destruction of VOC.

If the same chemical (e.g. a washing agent with VOC content) is used in more than one printing method, the printing company must distribute the quantities of this chemical in relation to the quantities of paper used for the methods concerned, unless the printing company makes their own separate registrations of the actual consumption for each individual printing method. Chemicals used in the finishing treatment are similarly distributed among the printer's printing methods. Points are calculated on the basis of the volume of output and **VOC consumption** as well as information of collection/destruction, if any, of VOC.

In addition, in the case of heatset, consumption must be adjusted for measurement results from point releases of VOC in accordance with the instructions in Appendix 7.

Information on the VOC content of chemicals can be found in My Swan Account.

P8 Emission of volatile organic compounds - VOC

Points can be allotted for each individual printing method depending on the VOC content of the chemicals and information about the collection/destruction, if any, of VOC.

Calculate points for VOC in kg per tonne of paper on an annual basis for the printing method.

points = 2* (10 – VOC used)

Example: If 5 kg of VOC are used per tonne of paper, and there is no collection or destruction of VOC, the calculation will be as follows:

$$2*(10 - 5) = 10 \text{ points}$$

Table P8 Example of points (rounded off)

VOC (kg/tonne paper)	Points
0	20
2	16
5	10
8	4
10	0

See the special instructions for calculating VOC emissions for inter alia heatset and gravure printing in Appendix 7.

The documentation must consist of a calculation in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



See O5. In the case of heatset and gravure printing the applicant must upload a duly completed excel form for manual calculation. The excel form is available from Nordic Ecolabelling.

Mandatory requirements for emissions

O8 Emissions to air and water from gravure printers

Gravure printers must emit a maximum of 25 mg chromium (Cr-tot) and a maximum of 90 mg copper (Cu) per tonne of product. Emission of chromium and copper to the drain must be measured after the sewage treatment plant and before the drain. A representative collection sample must be collected each month and the annual water consumption in the cylinder manufacturing process must be registered. At least one annual analytical test must be performed by an accredited laboratory to determine the average content of chromium and copper in the samples collected.

Gravure printers must have a plant designed to reduce emissions to air of chromium -6 (Cr⁶⁺). Emissions of chromium -6 to air may be a maximum of 5 mg/tonne per product.

The gravure printers must have a closed system or a recovery plant for toluene to inspect, measure and register VOC emissions (continuous on-line measurement) in which the recovery of toluene is at least 92%.

The documentation must consist of a report, calculations and an analysis report in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Calculation of the quantities of emitted chromium and copper per tonne of product based on the analysis result and registration of annual water consumption in the cylinder manufacture, as well as the analysis report, must be uploaded in the application aid in My Swan Account.

A description of the purification plant on site and documentation of the inspection and registration of the chromium-6-emissions to air must also be uploaded. The documentation must contain a test result showing the emission of chromium-6 in mg per tonne of product.

Furthermore, descriptions of the closed system or the recovery system, as well as a completed excel form for calculating the toluene recovery, must be uploaded. The Excel form is available from Nordic Ecolabelling.

3.4 Energy and carbon dioxide emission

Mandatory requirements for energy consumption

O9 Energy consumption

Energy consumption is calculated as purchased energy in the form of electricity, district heating/cooling and fuel for a **printing method** must not exceed 3 500 kWh per tonne of product and year. However,

For sheet offset printing, limit value 4000 kWh per tonne of product/year is applied.

For digital printing, limit value 5000 kWh per tonne of product/year is applied.

Energy consumption for a printing method is calculated using information in invoices received from suppliers of electricity, fuel and heating to the practising company in relation to the volume of output on an annual basis.

If the printer uses multiple methods of printing and does not calculate the energy consumption for each method separately, the method for allocating energy consumption in Appendix 7 must be used. The allocation is calculated automatically in My Swan Account.

If the practising company is unable to document their electricity consumption on the basis of direct settlement with an electricity supplier (e.g. an in-house printing shop), the practising company shall install electricity metres and read off the annual consumption. If the electricity supply is not central, the practising company must as a minimum install electricity metres on all printing machines or alternatively, calculate electricity consumption (Watt hours) for printing machines by means of power (Watt) which is given in product safety data sheets of machines and real operating time (hours). The total quantity of electricity used (electricity consumption measured for the printing machines and other electricity consumption (excluding electricity consumption for heating) is calculated by multiplying measured electricity consumption from the printing machines by a factor of 2.86.

If the practising company is unable to document their heating/cooling use on the basis of direct settlement with a supplier (e.g. an in-house printing plant), and the printing company does not use electricity for heating, the practising company must calculate their total energy consumption by calculating heat consumption on the basis of the heat consumption of the building and adding this to electricity consumption.

The printing plant's share of the total heat consumption of the building is calculated on the basis of floor space of the printing plant relative to the heated area in the building as a whole. Any floor space that is to be excluded from this calculation must be approved in advance by Nordic Ecolabelling.

For heating of printing companies in Iceland, geothermal energy is not included in the energy consumed. If the printing company utilises external finishing, an energy consumption of 90 kWh per tonne of product must be added to the printer's internal energy consumption unless the printing company can document that the external finisher has a different energy consumption. This applies to all external finishing, i.e. both for finishers encompassed by O3 (the exemption of 5% in O3 does not apply here) and for finishers that exclusively perform mechanical finishing.

Printers that sell surplus energy, e.g. in the form of district heating, may deduct the quantity sold.

Example of a calculation of energy consumption from external finishing: If the printer utilises 500 tonnes of paper per year on orders that are finished externally, the supplement for external finishing will be $90 \times 500 \times (1 - 30/100) = 31\,500$ kWh, if the printer has a total wastepaper percentage of 30.

Example of calculation of heat consumption for an in-house printing plant: If the printer has a floor space of $2\,000\text{ m}^2$ and is located in a $50\,000\text{ m}^2$ building with a total heat consumption of $500\,000$ kWh per year, the heat consumption of the printer will be $500\,000 \times 2\,000/50\,000 = 20\,000$ kWh per year.

Newspaper printers may deduct energy consumption related to an in-house editorial office, if this can be measured separately. Alternatively, qualified estimates/assessments must be made, which are to be approved by Nordic Ecolabelling. This also applies to other printers and other activities that are not related to the production.

The energy content of various fuels and district heating is specified in Appendix 7.

The documentation must consist of a calculation in accordance with the requirement above and annual statements or invoices from suppliers of electricity, fuel and heating. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete in the electronic application aid My Swan Account by filling in electricity and heating consumption and potential fuels used. In-house printing houses are also documented. Annual statements or invoices from suppliers of electricity, fuel and heating must also be uploaded. Upload product safety data sheets of printing machines and operating time if they are used in calculation.

Points for energy consumption and carbon dioxide emissions (20 points in total)

The applicant may allot a maximum of 20 points in total (see P9-0) for **energy consumption** and for energy efficiency measures at the **practising company** or for charting carbon dioxide emissions in the supplier chain.

P9 Energy consumption (18 points)

Calculate points for energy consumption in kWh per tonne of product on an annual basis.

$$\text{Points} = 18/2900 * (3500 - \text{energy consumption})$$

Energy consumption is calculated as specified in O9.

Example: If 850 kWh is used per tonne of product per year, the calculation will be as follows:

$$18/2900 * (3500 - 850) = 16,4 \text{ points}$$

Table P9 Example of points (rounded off)

Energy consumption /kWh/tonne product)	Points
600	18
1000	16
2000	9
3500	0

The documentation must consist of a calculation in accordance with the option for scoring points above and annual statements or invoices from suppliers of electricity, fuel and heating. Please follow the instructions under O9 regarding the electronic application aid in My Swan Account when preparing the application.



See O9.

P10 Charting of energy consumption, energy sources and carbon dioxide emissions (2 points)

Energy consumption in kWh has been charted and a proposal has been drafted for measures, including energy-saving potential and costs and a plan for energy-efficiency measures with targets that are measured every year. The mapping must encompass an overview of total heat/fuel consumption and electricity consumption. The overview may be calculated for certain of the most energy-intensive activities, e.g. printing machines, ventilation and fans, illumination and electronic equipment. This mapping must be no older than five years	2 points
The printer has a valid certificate/declaration from the supplier concerning the purchase of renewable energy sources for 100% of electricity consumption	2 points
The printer has a valid certificate/declaration from the supplier concerning the purchase of renewable energy sources for 100% of heat consumption	2 points
Carbon dioxide emission in the supplier chain has been mapped in accordance with Intergraf's recommendations from 2010 or more recently (Intergraf recommendations on CO2 emissions calculation in the printing industry, 8th February 2010, www.intergraf.eu).	2 points

The documentation must consist of a description in accordance with the requirement outlined above as well as related plans, reports or certificates. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete the electronic application aid in My Swan Account by selecting the applicable alternative and upload the mapping and plan for energy-efficiency measures, the mapping of carbon dioxide emissions or a certificate from the supplier documenting the purchase of electricity or heating from renewable energy sources.

3.5 Waste

Mandatory requirements for waste plan

O10 Waste plan

In order to facilitate sorting of waste at source and appropriate removal, a **waste plan** must be drawn up for the **practising company**, specifying waste fractions from the production process and the party responsible for removing the waste.

The fractions and information typically to be specified in the plan are available from Appendix 2 and also form part of the application aid in My Swan Account.

Documentation of waste disposal, e.g. invoices or an annual statement from the waste disposal operator, must be available at the printing company.

The documentation must consist of a plan in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Complete the electronic application aid in My Swan Account. If the printer is environmentally certified (ISO 14001, EMAS) or has an environmental licence from the authorities, it will be sufficient for the waste plan to be uploaded from the system together with the environmental management certificate/environmental licence.

Points for minimising waste (10 points in total)

The applicant may allot up to 5 points for P11 for each printing method and up to 5 points for P12, for minimising solid and liquid **waste** at the **practising company**.

P11 Waste minimisation (5 points in total)

One of the following technologies is used to minimise ink waste in the production of printed matter: Automatic pumping from tank, drum or the like, chamber doctor blade or automatic transfer from colour, toner or ink cartridges. If printing ink cans are also used, these are weighted with zero points relative to the purchased/received weight:	5 points
Technology is used to recover used washing agent solution or dampening solution that can no longer be circulated (e.g. evaporator):	5 points
Washing agent solution/rinsing water is used to dilute new printing ink (e.g. a system for washing agent solution for diluting new water-based printing ink in flexography):	5 points
Other technology is used to prevent the occurrence of dampening solution waste and/or washing agent solution waste (e.g. encompassing thorough filtration of dampening solution or printing machines without circulating dampening solution such as dry offset and digital printing):	5 points
Dampening solution and/or washing agent solution is filtered before it is released into the sewage system (e.g. using charcoal filters or particle filters):	2 points
Washing agent solution is circulated (e.g. automatic washing):	1 point

The documentation must consist of a report in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Complete the electronic application aid in My Swan Account by selecting the appropriate technology.

P12 Unsorted waste (5 points)

Calculate points for mixed waste in kg per tonne of product (unsorted, solid waste that is incinerated or goes to a land fill) using the following formula:

$$\text{Points} = 5 - \text{quantity mixed waste}/4$$

If household waste can be separated, it can be excluded from the calculation.

Example: If there is 10 kg mixed waste per tonne of product, the calculation will be as follows:

$$5 - 10/4 = 2.5 \text{ points}$$

Table P12 Example of points (rounded off)

Mixed waste (kg/tonne product)	Points
0	5
5	4
10	3
15	1
20	0

The documentation must consist of a calculation in accordance with the option for scoring points outlined above and a summary for the year of quantities of unsorted waste from the waste disposal operator. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete the electronic application aid in My Swan Account by entering quantities. Upload a summary for the year of quantities unsorted from the waste disposal operator.

3.6 Ecolabelled products

Points for ecolabelled products (3 points in total)

The applicant may allot a maximum of 3 points for the use of ecolabelled products (goods or services) by the practising company. This requirement has been included in order to increase awareness of green purchasing policies.

P13 Ecolabelled goods and services

At least 90% by weight of used rags or 90% by weight of used work clothes is laundered at a Nordic Swan Ecolabelledlaundry	2 points
At least 90% by weight of production (regarded as paper consumption) is produced with Nordic Swan Ecolabelledtoner cartridges and/or in Nordic Swan Ecolabelledcopying/digital printing machines	2 points
At least 90% by weight of industrial tissue paper, which is Nordic Swan Ecolabelledor EU ecolabelled, is used in the printing process (does not include for example hand drying in toilets and the like)	1 point
At least 30% in at least one of the product types toner cartridges, computers, printers, copying machines or other office machines are used in the office which are Nordic ecolabelled, EU ecolabelled or labelled with the Blue Angel or Eco-mark, calculated on the basis of the costs of purchase of the individual product type	1 point
At least 90% by weight in at least one of the product categories work clothes or cloths are used in production which are Nordic Swan Ecolabelledor EU ecolabelled	1 point
At least 50% by weight of the washing agents used in the printing process is Nordic Swan Ecolabelled	2 points
Other Nordic or EU ecolabelled goods or services are used in production subject to approval by Nordic Ecolabelling	1 point
At least 90% of Nordic Swan Ecolabelledor EU ecolabelled consumables are used elsewhere than in production within at least two of the following product categories: Copying paper, hand soap, toilet tissue and cleaning detergents calculated on the basis of costs of purchase of the individual product type. Other categories may be included subject to approval by Nordic Ecolabelling	0.5 points

he documentation must consist of a report and calculations, if any, in accordance with the option for scoring points outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.



Complete the electronic application aid in My Swan Account by selecting the alternative that fits best and specify the name and manufacturer of the ecolabelled products/services and any calculations.

3.7 Occupational health

Mandatory requirements for solvents

O11 Exhaust extraction

There must be local exhaust extraction for all printing units on all printing machines with more than two print/varnish units if the annual **VOC consumption** for the printing method concerned is more than 9 kg per tonne of product and year.

For calculation of VOC consumption, please refer to P8. If the printing company calculates VOC consumption per printing machine, it will suffice to install local extraction for printing machines whose consumption exceeds 9 kg per tonne of product a year. If the printing machine is enclosed as part of its design and has central extraction (for instance certain digital printing machines), it will not be necessary to install extraction at each printing unit.

The documentation must consist of a calculation in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Accountwhen preparing the application.

- ☐ See P8. Moreover, documentation describing exhaust extraction installed are uploaded in the electronic application aid in My Swan Account if the limiting values are exceeded. If an applicant wishes to make individual calculations for each printing machine, such calculations must also be uploaded.

Points for occupational health technologies (3 points in total)

P14 Occupational health technologies

Local extraction or the like is used in the delivery system at least on one printing machine that is used in production to reduce paper dust and particles in the air	1 point
Local extraction or similar is used on all cutting machines in finishing or at least in the two largest cutting machines to reduce paper dust and particles in the air	1 point
An external health and safety review of the printer exists that is no older than three years as does a report on planned and implemented follow-up measures. The review must as a minimum encompass a general assessment of paper dust, solvent exposure, noise, ergonomics and heavy lifting as well as a special assessment of washing of rubber blankets/rollers and the cleaning of ink reservoirs, replacement of printing forms, processing of printing forms (e.g. gumming/cleaning) and cleaning and maintenance of printing units	2 points

The documentation must consist of a report in accordance with the option for scoring points outlined above and possibly also a plan. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☐ Complete the electronic application aid in My Swan Account by selecting the appropriate technology. For points for an external health and safety review upload a copy of the report.

3.8 Water

Points for water consumption (2 points)

P15 Water consumption

Water consumption (l/tonne product)	Points
Up to 500	2
500 - 2000	1
Over 2000	0

*After assessment by Nordic Ecolabelling, and if the water consumption can be measured separately, the printer may deduct water consumed that is not related to operations of the printing company. The operations of the printing company include the same things as those covered by the **energy consumption** of the printing company – please refer to Terms and definitions.*

The documentation must consist of a calculation in accordance with the option for scoring points outlined above and a summary for the year of the water consumption from the supplier. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☐ Complete the electronic application aid in My Swan Account by entering quantities and upload an annual summary of the water consumption from the supplier.

4 Print quality

Points for print quality

P16 Print quality

The practising company has a certified quality system for print quality in accordance with ISO12647 or a standard based on ISO 12647	1 point
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The documentation must consist of a report in accordance with the option for scoring points outlined above and a copy of the certificate. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☐ Complete the electronic application aid in My Swan Account and upload a copy of the certificate.

5 Counting-up of points

The **practising company** must score a number of points for each of the **printing methods** used. The following table specifies the number of points required for the various printing methods.

Table 5 Points for various printing methods

Printing method	Minimum points
Sheet offset*	63
Coldset, newspapers	90
Coldset, forms	68
Coldset rotation (except newspaper and form printing)	78
Heatset rotation	68
Gravure printing	76
Flexography (except envelope production with flexography)	85
Digital printing	79
Envelope production with flexography	80

* The following formula shall be used to calculate the minimum points for sheet offset where packaging offset is included,

$$\text{Point} = 0.18 \times \% \text{ by weight share sheet offset} + 45$$

The percentage share sheet offset is calculated out of the totality where the total is the sum of paper consumption (tonnes) for sheet and packaging offset. Packaging offset shall not exceed 50% by weight of sheet offset in the printing company.

Envelope production with and without flexographic printing on the inside is treated as envelope production with flexography. Other printed matter without printing (e.g. Post-it notes or note pads without printing) is encompassed by the same printing method as that used for printing the cover or another part of the printed matter. Copying services are included in digital printing. Only copying services provided by the printing company are included, which means that copying exclusively for internal use is not included. The documentation must consist of a calculation of points in accordance with the option for scoring points in the criteria.

My Swan Account calculates the total number of points for each printing method on the basis of the values entered by the applicant.

6 Other requirements

To ensure that requirements of The Nordic Swan Ecolabel are met, the following routines must be implemented.

The routines and instructions needed to fulfil the requirements listed below (M1-M8) are available in Appendix 3 and also form part of My Swan Account.

M1 Legislation and the requirements of the authorities

The applicant must ensure compliance with the applicable legislation, including regulations governing safety, the working environment, the external environment, chemicals, and any permits required by the authorities for the production and handling of printed matter.

The documentation consists of the signed application form. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☐ Signed application form. If the printer releases chromium, copper (e.g. gravure printers) or silver, the printer must upload a copy of the permit issued by the authorities for emissions of this nature to the electronic application aid in My Swan Account.

M2 Organisation and responsibility

The applicant must have an organisational structure that ensures that the requirements of the ecolabelling criteria are fulfilled at all times. An inspection or quality officer as well as a contact person for ecolabelling must be appointed.

The documentation must consist of a description in accordance with the requirement outlined above. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☐ Upload a written account of the requirement in My Swan Account (see example in Appendix 3).

M3 Changes, deviations, complaints

The applicant must ensure that there are routines for changes, deviations, complaints and for reporting to Nordic Ecolabelling.

The documentation must consist of copies of routines and instructions in accordance with the requirement outlined above. Please follow the instructions under M2 regarding use of the electronic application aid in My Swan Account when preparing the application.

- ☐ See M2.

M4 Documentation of the application

The applicant must ensure that all documentation relating to the application and ongoing inspection of the requirements is collected in one place. This can be in either physical or electronic form.

The documentation must consist of a description in accordance with the requirement outlined above. Please follow the instructions under M2 regarding use of the electronic application aid in My Swan Account when preparing the application.

- ☐ See M2.

M5 Record keeping

The practising company must have a system in place for recording documentation of compliance with the ecolabelling requirements. The process is to ensure that the **practising company** at all times keeps track of documentation showing that the ecolabelling requirements are complied with.

If the practising company has a certified environmental management system (ISO or EMAS) covering the printing to be ecolabelled, information from an environmental audit or an environmental report from this can be used as a record. This applies if the method of specifying data is the same as in this document.

The same applies if the business operates green accounts, environmental reports or the like. The documentation may, for example, consist of specifications from suppliers, invoices from purchases, lists of suppliers or printouts from accounting systems. It could also consist of information stored in electronic form, provided that backups are taken on a regular basis. The documentation must be stored throughout the term of validity of the licence. Sometimes it will be necessary to correct for stock differences. In that case, the documentation must also include results of stock-takes from the beginning of the period and the end of the period.

If the printer does not have documentation of consumption for a full year, the printer may, subject to prior agreement with Nordic Ecolabelling, document a period of three months.

The documentation must consist of a description in accordance with the requirement outlined above. Please follow the instructions under M2 regarding use of the electronic application aid in My Swan Account when preparing the application.



See M2.

M6 Maintenance of the licence

The printing company shall continuously ensure that the requirements in the Criteria are met. At least once a year (no later than 6 months after the closing of the accounts), an internal review of operations has to be done.

Nordic Ecolabelling may request reports from the printing company's internal review and carry out an inspection according to a sample plan or all requirements. The inspection is informed in advance.



Procedures for maintenance of the licence.

M7 Training

Everyone participating in day-to-day operations must be given the necessary knowledge to ensure that The Nordic Swan Ecolabelling requirements are fulfilled.

The documentation must consist of copies of routines and instructions in accordance with the requirement outlined above. Please follow the instructions under M2 regarding use of the electronic application aid in My Swan Account when preparing the application.



See M2.

M8 Marketing

The requirement is removed as decided by the Board of Directors 17 November 2014.

6.1 Special requirements concerning the placement of The Nordic Swan Ecolabel logo on printed matter

The following requirements M9-M13 apply to **printed matter** that will bear the ecolabel. Inserts in, for example, magazines and daily papers need only meet the requirements if The Nordic Swan Ecolabel logo also has to appear on the insert.

M9 Paper

A minimum of 90% of the total weight of The Nordic Swan Ecolabelled printed matter must consist of inspected or Nordic Swan Ecolabelled paper. Paper with the EU ecolabel can only be used if there is documentation demonstrating that the paper also complies with The Nordic Swan Ecolabelling requirements for inspected paper. In the case of **books**, folders, **ring binders**, notepads and forms, the requirement is 80%.

See inspected and ecolabelled paper grades on My Swan Account and paper with the EU ecolabel on the EU ecolabel's website.

In order for a paper grade to be inspected and recorded in My Swan Account, the paper mill must document compliance with the requirements using Appendix 5. It also appears from Appendix 5 which requirements are to be documented if the paper already bears the EU ecolabel.

Inserts that are fixed are considered part of the printed matter.

The documentation must consist of the completed and signed declaration in Appendix 6. Please follow the instructions below regarding the electronic application aid in My Swan Account when preparing the application.

- ☒ Upload a copy of the duly completed and signed Appendix 6 in the electronic application aid in My Swan Account. Upload also valid licence documentation for EU ecolabelled paper if the paper is not already available in the list for selection. Valid licence documentation consist of contract's Annex including trade names or valid certificate including trade names.

M10 PVC

Nordic Swan Ecolabelled printed matter must not contain PVC.

Documentation: see M9.

- ☒ See M9.

M11 Fragrance

Fragrance/scent must not be added to Nordic Swan Ecolabelled printed matter (e.g. scented varnish). Packaged product samples with fragrance, attached to an item of printed matter, or removable scratch samples, are not encompassed by this.

Documentation: see M9.

- ☒ See M9.

M12 Printer suppliers and finishers

All printer suppliers used in the production of printed matter that is to bear The Nordic Swan Ecolabel must be licensed to use The Nordic Swan Ecolabel. All external finishers encompassed by O3 must have been inspected.

Documentation: see M9.



See M9.

M13 Traceability

If only part of the output of the printing company is Nordic ecolabelled, orders bearing The Nordic Swan Ecolabel must be marked clearly to enable them to be separated from other orders. Information must also be displayed disclosing the paper grades and subcontractors used and the way in which The Nordic Swan Ecolabel logo is reproduced on the items of printed matter (e.g. with the aid of order notes or order bags).

Documentation: see M9.



See M9.

Follow-up inspection

The follow-up inspection may cover all requirements in the criteria document and is conducted to a greater or lesser extent throughout the term of validity of the licence. Responsibility for performing an inspection of this kind rests with the ecolabelling organisation.

In the case of printers and suppliers, the inspection might typically involve the following:

- a request to the printing company to file the most recent annual report (M6)
- check that the distribution of responsibilities is updated (M2) and that relevant employees have received the necessary training (M7)
- check with the regulatory authorities whether the printer/supplier has outstanding issues in relation to compliance with the applicable legislation
- check that paper has been inspected/Nordic Swan Ecolabelled in orders that have been Nordic Swan Ecolabelled
- check that packaging and materials included in Nordic Swan Ecolabelled orders do not consist of PVC (M10)

Regulations for the Nordic Swan Ecolabelling of services

To easily identify Nordic Swan Ecolabelled services, the licence number and a descriptive sub text shall always accompany the Nordic Swan Ecolabel.

The descriptive sub text for 041 Printing companies, printed matter, envelopes and other converted paper products is as follows:

- For a printing house as a whole: **Printing house**
- For ecolabelled printed matters produced at an ecolabelled printing house: **Printed matter**

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

How long is a licence valid?

Nordic Ecolabelling adopted the criteria for printing companies on 15 December 2011 and these will remain in force until 31 December 2014.

On 15 May 2013 the Secretariat Manager's meeting decided on temporary adjustments concerning requirements for paper (O4, P1 and M9) and some general lingual revisions of the criteria. The validity of the criteria document was also prolonged 3 years. The new version is called 5.1 and is valid until 31 December 2017.

On 12 November 2013 the Secretariat Manager's meeting decided to adopt some changes in requirement O5. Exemptions were granted to addresser with ink, adhesives that contain isocyanate and cobalt compounds that are used as drying agents in printing inks.

Some editorial changes were also made. In requirement O1, clarifications concerning 75% of the company's turnover and use of same paper grade in separate printing methods were adjusted. Points for Nordic Swan Ecolabelled washing agents (P13), date of annual reporting (M6) and definition of waste paper concerning newspaper and magazines that are returned from stores were also specified (Terms and Definitions). Moreover, use of the logo (Design of The Nordic Ecolabel) was clarified. The new version is called 5.2 and is valid until 31 December 2017.

On 11 December 2013 the Secretariat Manager's meeting decided to adjust requirement O4, P1 and M9 so that Nordic Ecolabelled/inspected paper/paper envelopes and EU Ecolabelled paper in Nordic Swan Ecolabelled printed matter can be used as long as the criteria for Nordic Swan Ecolabelled paper (v.3)/envelopes (v.4) are valid. The new version is called 5.3 and it is valid until 31 December 2017.

On 19 February 2014 the Secretariat Manager's meeting decided to adopt some changes in requirement O5 for chemicals. Exemptions were granted to ink (for large format and UV ink) with certain conditions. This exception is not applied to ink that is used in Nordic Swan Ecolabelled printed matter. Chemicals for film and form production were also exempted from the requirement for classification with R43 and/or R52/R53. The new version is called 5.4 and it is valid until 31 December 2017.

On 13 May 2014 the Board of Directors decided to adopt some changes in requirements O1, paper (P1), chemicals O5, emissions of VOC (P8) and energy (O9 and P9). In O1, calculation for specific printing methods were adjusted (concerning offset printing of envelopes and printing method comprises at maximum 5% of printing company's total production).

Possibility to Ecolabel printing company in case of other products than paper comprise over 25% was also adjusted. In paper requirement P1, total points for choice of paper can be weighted by factor 1,75 until 31 December 2015. In chemicals O5, proportion of chemicals fulfilling the requirement was decreased from 99% to 95% and printing inks, toners and ink were united to one printing category. Requirement for EDTA in film and form production was also adjusted and classification for wet toners including mineral oils. In requirement for emissions of VOC P8, calculation method per ton paper was clarified. In energy requirement, limit values for digital printing and sheet offset printing were adjusted as well as equation for calculating energy points. The new version is called 5.5 and it is valid until 31 December 2017.

On 27 November 2014 the Management group of product development for The Nordic Ecolabelling decided to adopt a change in requirement O5 regarding cobalt compounds that are used as drying agents in overprint varnish. On 17 November 2014 the Board of Directors decided to remove M8 Marketing. The new version is called 5.6 and it is valid until 31 December 2017.

On 11 February 2015 The Nordic Ecolabelling's Criteria Group decided per capsulam to adopt a change in requirement O5: until 31 December 2015 can cobalt complex dyes in foils for foil printing and UV inks in inkjet machines be used.

On 13 May 2015 The Nordic Ecolabelling's Criteria Group decided per capsulam that packaging offset is included as part of the sheet offset method. A new equation for calculating the minimum points for sheet offset was introduced. Packaging offset shall not exceed 50 weight-% of sheet offset in the printing company.

On 15 December 2015 the Board of Directors decided to adopt some changes in requirements for paper (P1) and chemicals (O5). In paper requirement P1, total points for choice of paper can be weighted by factor 1.5. In chemicals O5, the derogations regarding cobalt complex dyes in foils for foil printing and UV inks in inkjet machines were made permanent in this generation of the criteria. The new version is called 5.9 and it is valid until 31 December 2017.

On 1 June 2016 The Nordic Ecolabelling's Criteria Group decided that chemicals for film and form production are exempted from the requirement for classification with H373 and/or H411. The new version is called 5.10 and it is valid until 31 December 2017.

On 11 October 2016 The Nordic Ecolabelling's Criteria Group decided that for heating of printing companies in Iceland, geothermal energy is not included in the energy consumed (req. O9 and P9). The procedures for maintenance of the licence were also updated in the requirement for annual report (M6). The new version is called 5.11 and it is valid until 31 December 2017.

On 21 December 2016 The Nordic Ecolabelling's Criteria Group decided per capsulam that the validity of the criteria document is prolonged 18 months. The new version is called 5.12 and is valid until 30 June 2019.

The ecolabelling licence will be valid for as long as the criteria are fulfilled and remain in force. The criteria may be extended or adjusted. If so, the licence will be extended automatically and the licence holder will be notified.

At least one year before the criteria expire, Nordic Ecolabelling will announce the criteria applicable after the expiry date. This will give the licence holder the opportunity to renew the licence.

New criteria

In the future criteria, Nordic Ecolabelling will follow developments and tighten up the requirement levels regarding total score in relation to the new market levels.

Moreover, Nordic Ecolabelling will evaluate the possibilities of introducing:

- A functional unit based on area
- Requirements for other printing materials than paper
- An adjustment of the points formula for inspected/ecolabelled paper so that the score better reflects the weighting factors for the various paper grades
- A lower triviality limit for process chemicals
- Requirements for classification of chemicals applicable at substance level
- Requirements for printing inks to prevent problematic substances in materials manufactured from recycled paper
- A quantitative CO₂ parameter
- A ban on fragrance in all items of printed matter or in printed matter aimed at children

Terms and definitions

Term	Explanation or definition
Adhesives	Adhesives in their pure form but also adhesives supplied on such products as prefabricated covers, or foils for foil printing or laminates.
Algicides	Chemicals designed to prevent the growth of algae and the like in recirculating systems in print production.
Alkyl phenols and derivatives thereof	A group of chemical substances that may be present in the chemicals and which form the hormone disrupting substance alkyl phenol when they break down in nature.
Aromatic compounds	Aromatic compounds may be present to a lesser extent in chemicals at printing companies. "Aromatic" indicates the chemical structure of the compound.
BCF	Bio Concentration Factor. A biological measure of the ability of a chemical substance to accumulate in the food chain. The same as the bioaccumulability potential of a substance. If the BCF is 100 or higher, the substance is potentially bioaccumulable.
Books	Stitch bound and/or glue bound printed matter with hard or soft covers designed to have a long life, e.g. school books, fiction or non-fiction books, reports, calendars with covers, handbooks and paperbacks. Printed matter not classified as books includes journals, brochures, magazines, catalogues published on a regular basis (e.g. annually) and annual reports. These types of printed matter have a short life.
Chemicals	In this document chemicals are mixtures (earlier preparations) or chemical substances. The authorities have rules for classifying mixtures and substances.
Chemicals for film and printing form production	All chemicals used in film and printing form production for all printing methods. For instance, algicides, plate developer, gumming agents for the production of offset plates, chemicals for the production of flexographic plates and chemicals for production of gravure printing cylinders. Plate cleaners and other-corresponding chemicals are regarded as washing agents and thus, not included in the category of chemicals for film and printing form production. Repair material is nor included in this category of chemicals.
Dampening solution additives	Chemicals that are added to the dampening solution. Examples include alcohol (IPA, isopropyl alcohol) or other chemicals with a similar function. They also include chemicals added to the dampening solution as softeners.

EDTA and its salts	A group of chemical compounds that may be present in chemicals at the printing company. The abbreviation stands for ethylene-diamine-tetra acetic acid.
Energy consumption	Energy encompasses all the printing company's purchases of electricity, district heating, fuel for stationary combustion plants etc., calculated as kWh of purchased energy on an annual basis per tonne of product. This encompasses the entire production process in the form of pre-press, printing and finishing, as well as other subprocesses/functions at the printing company, such as chemical stores, paper and product stores, ventilation, lighting, internal treatment of water and emissions as well as support functions, such as offices, toilets, changing rooms and other common areas. This parameter does not include fuel, if any, used for the printer's own vehicles.
Envelope	For the purposes of this document, a cover made of paper in which letters are sent. The paper is folded and glued along the sides or, on smaller envelopes, diagonally on the rear side. Many envelopes have printed areas on the inside surfaces in order to conceal the contents.
Foils for foil printing	Pigments with, for example, a metallic appearance or a hologram effect on a carrier material. The foil is stamped out and transferred to the printing material in special machines. The process is called foil printing, blocking or hot stamp embossing.
Form	A physical document designed for collecting information in a structured way, normally in specified and categorised fields. In this document the forms are made of paper.
Fragrance	A substance or mixture added to add scent to the product. Aroma containing substances, such as scents in plant extracts, is also regarded as fragrance.
Heavy metals	<p>A group of metals that may be present or was previously present in chemical compounds in certain printing inks. In this document, heavy metals are the metals lead, cadmium, mercury and chromium at oxidation stage 6.</p> <p>Background: There are several definitions of heavy metals. Normally, the term heavy metals is associated with metals or metal-like substances that are harmful to humans or the environment.</p>
Inks	All chemicals, apart from toners, used to transfer an image or text to the print medium by digital printing and that are used in production of printed matter to the customer.

Inspected/

ecolabelled paper

Ecolabelled paper is Nordic Swan Ecolabelled or EU eco-labelled copying or printing paper. Inspected paper is not Nordic Swan Ecolabelled paper, but paper for which it has been demonstrated to Nordic Ecolabelling in a substantiated way that it meets the requirements in Appendix 5. My Swan Account contains an updated list of inspected and Nordic Swan Eco-labelled paper grades.

LogKow

The octanol-water partition coefficient. A physical measure of the ability of a chemical substance to accumulate in the food chain. The same as the bioaccumulability potential of a substance. If logKow is greater than or equals 3.0, it is potentially bioaccumulable. K denotes coefficient and ow stands for octanol-water.

Newspaper

Daily papers and weekly papers. Daily papers are published daily and weekly papers once a week. They are printed on cheap, thin paper.

Overprinting varnishes

Chemically speaking offset printing inks without pigment. In this document overprint varnish is considered a varnish and not a printing ink.

Packaging

Products used for packaging, storing, protecting, presenting and transport of goods. This document encompasses packaging made of paperboard and cardboard related to definition of printing methods. Note that separate requirement concerns packaging made of plastics.

Paper

A printing material encompassed by Nordic Ecolabelling and the EU Ecolabel's criteria for copying and printing paper. E.g. printing paper, copying paper, newspaper, cardboard, etc. Consequently, material for corrugated cardboard and sack paper does not count as paper in this document. This means that the printing company cannot include turnover, if any, from these types of paper in the 75% of its turnover of printed matter that must derive from printing on paper (requirement O1).

Paper consumption

The number of tonnes of paper per year used by the printing company for the printing method in question, or the printing company's total paper consumption. Quantities of paper not purchased by the practising company itself (i.e. paper supplied by the customer), but used in the printing method in question, must be added. This also applies to semi-manufactures produced with a different printing method in-house, or externally produced semi-manufactures. Hence, the sum of paper consumed for each printing method need not be the same as that for the paper consumption for the entire printing company. Paper purchased by the printing company, but not used in the production, is not a part of the paper consumption. If a large stock of paper is kept, paper consumption must be adjusted for stock differences.

Phthalates	A group of chemical compounds that may be present in chemicals at the printing company. Chemically, phthalates are esters of phthalic acid (1,2-benzene-dicarboxylic acid).
Practising company	The business that performs the actual printing operation.
Printed matter	<p>Printed matter is the result of the processing of a printing material. The processing consists in an image, pattern, text or the like being printed on paper or some other printing material. In other words, one of the primary functions of the printed matter is as an “information carrier”.</p> <p>In addition to printing, the processing may include finishing, consisting of various forms of mechanical processing, such as folding, stamping and cutting or various forms of assembling, using glue, staples, stitches and the like. In the case of some printed matter, the processing is confined to finishing, i.e. it does not undergo a printing process (for example, some notepads and envelopes).</p> <p>Printed matter includes newspapers, advertising matter, journals, catalogues, books, leaflets, brochures, pads, posters, loose-leafs, business cards, folders, ring binders with paper contents, labels, packaging and envelopes. Stationery and office supplies, such as notebooks, exercise books, notepads, etc. that are sold by wholesalers or via the retail trade, are also classed as printed matter. Serviettes, kitchen rolls, toilet paper and similar products are not classed as printed matter. Separate ecolabelling criteria exist for these. The same applies to the developing and printing of photographs. In case of roll-up stands and other similar products, only the material carrying the information is regarded as printed matter. Other parts of the product are not included.</p>
Printing	Printing is a process whereby a printing material is converted into printed matter. Printing may include printing on printing materials and/or finishing.
Printing company/ Printing house/Printers	<p>A business providing printing services, where printing constitutes a substantial part of business. Printing is done by traditional printing companies, but also by photocopying centres and other businesses carrying out printing. There may also be printing companies that do not do the actual printing themselves. Typical printing companies are sheet fed offset printers, rotary printers, heatset printers, newspaper printers, magazine printers, packaging printers, envelope printers, board printers, label printers, digital printers and flexographic printers, but also manufacturers of envelopes and packaging as well as manufacturers of other products encompassed by the term printed matter in this document. Usually, publishing houses and advertising agencies are not regarded as printing companies as they do not provide printing services as a substantial part of their business.</p>

Printing inks	All chemicals used to transfer an image or text to the printing material by all printing methods except digital printing. Printing inks also include metallic inks (printing inks in which the pigment consists of, for example, aluminium or copper in metallic form) and ink additives that are mixed in 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.
Printing form	The unit that “transfers” the image to the printing press and directly or indirectly transfers printing ink to the printing material. In offset and in flexography, these are plates and in gravure printing, these are cylinders.
Printing material	The material that is to “carry” the information in the printed matter. Typically, this will be paper, but other materials may also be used, such as plastic, textiles, etc.
Printing method	Type of printing. The various printing methods are described in the European BAT report: Reference Document on Best Available Techniques on Surface Treatment using Organic Solvents, August 2007 (www.eippcb.jrc.es). Some of the printing methods are in this document defined in relation to which products are produced, such as newspapers and forms. See the definition of these terms elsewhere in this list. Copying services are encompassed by digital printing. Only copying services provided by the printing company are included; that is copying exclusively for internal use is not included.
Printing press	The machine that performs the printing on a printing material.
Renewable energy sources	<p>Renewable non-fossil energy sources: wind power, solar energy, terrestrial heat, wave and tidal energy, hydroelectric power, bio fuel, dump gas, gas from treatment plants and biogas.</p> <p>Bio fuel is the biodegradable fraction of products, waste and residues from agriculture (both vegetable and animal), forestry and similar industries and the biodegradable fraction of industrial waste and municipal waste.</p> <p>Nuclear power is not classed as a renewable energy source. Peat is not classed as bio fuel.</p>
Ring binder	A ring binder is a binder with content supplied to the “end-user” as a single package.
Supplier	Enterprise that supplies products (goods or services) to the printing company. The definition is based on the definition in ISO 9000:2000.
Toner	All chemicals, apart from inks, used to transfer an image or text to the print material by digital printing. Toners come in both dry (powder) and wet (liquid) form. Fuser fluid and developer used together with dry toner also count as chemicals in the toner category. Image oil and other chemicals used with wet toner also count as chemicals in the toner category.

UV inks	Inks that cure rapidly under ultraviolet radiation. The inks contain photo-initiators which, under UV radiation, start a process of polymerisation of the binders. The binders are reactive acrylates.
Varnish	Chemicals that are not printing inks which are applied to the printed matter with a view to providing protection against for example wear and tear or water/moisture (for example wax) and improving its appearance by giving it a shiny or matt surface. Varnishes may have a decorative effect, for example where they contain glitter, or have other effects, for example acting as a coating to temporarily conceal printed information.
VOC	Volatile Organic Compound. The generic designation for a number of groups of organic, readily vapourable fluids, including hydrocarbons, alcohols, ethers, esters, etc. that may be used as solvents and diluents in certain printing inks, varnishes and adhesives, as well as in washing agents. A washing agent may for example also be a VOC in its own right. Volatile Organic Compounds are organic compounds with a vapour pressure > 0.01 kPa (at 20°C) or with an equivalent volatility in particular usage situations (e.g. heating in a heatset kiln). This definition is the same as in the VOC Directive (1999/12/EC).
VOC consumption	Number of kilograms of VOC used on an annual basis based on the quantities purchased/received. Washing agents, dampening solution additives, printing inks and other chemicals may contain VOC. Some washing agents consist entirely of VOC. Storage differences can be corrected for. My Swan Account shows how much VOC is present in the various chemicals. When calculating VOC emissions, printing companies disposing of this under controlled conditions may deduct the VOC disposed of from its VOC consumption in accordance with Appendix 7. This, for instance, applies to printing companies that clean outgoing air for VOC (typically heatset printers) or printing companies that recycle and sell VOC (typically gravure printers) In the case of heatset the correction must take account of the result of measurements of point releases of VOC.
Washing agent solution	Liquid in the form of washing agents or a mixture of these with water.
Washing agents	All liquid chemicals, or chemicals in the form of paste, used to wash printing forms, off-press as well as in-press forms, and printing presses free of printing ink, paper dust, and the like. In addition also agents for washing/cleaning finishing machines are included, for instance agents to remove adhesive and varnish residues. For example, washing an offset printing press will involve washing the rubber blankets, ink rollers, ink fountains, etc.

The agents concerned might be for manual or automatic washing. Printing ink removers used in washing off dried printing inks on printing presses are also regarded as washing agents. The same applies to plate cleaners for washing offset plates. Cleaning agents for cleaning other parts of the printing machine (e.g. degreasing agents for removing lubricating oil) or for machines other than printing machines and finishing machines are not classed as washing agents.

Waste Any liquid and solid waste that leaves the printing company and is related to the printing company's activities excluding waste water from sanitary facilities. Finished printed matter and semi-manufactured products are not waste. This means that the following is regarded as waste: all liquids collected for inspected disposal or recovery and recycling, waste water from the process, used printing forms, waste paper, mixed waste, etc.

Waste paper All paper from production in the printing company that does not end up in the finished printed matter that the customer receives or that is supplied for temporary storage in a store (e.g. at the printing company). Waste paper includes shavings or cutting waste, waste from starting runs in the print works and the bindery (e.g. running-in in connection with folding, gluing, stitching), waste paper generated during printing and bookbinding operations, waste paper from paper storage (discarded unprinted paper) and leftover paper in rolls or other unused paper for printing. Waste paper does not include discarded and stored printed matter that The Nordic Swan Ecolabelled printing company has produced and received payment for. Packaging waste and used paper rolls are not classed as waste paper. Sold newspapers, magazines etc. that are returned back to printing company from stores for recycling can be excluded if amounts are known or alternatively, can be estimated. The printer may also omit from the calculation any waste paper arising if the printing company performs bookbinding work for other printers.

Appendix 1 Chemicals and materials (O5)

This form is for use by chemical and material suppliers for documenting Nordic Ecolabelling's requirements. The form combines all the chemical and material requirements and points. Documentation needed from the suppliers is in the form and the form must be completed electronically in My Swan Account.

Documentation sent directly to Nordic Ecolabelling will be treated confidentially. Only information saying that the product is inspected and approved, the content of VOC and points together with product name and distributor/supplier is published in My Swan Account for printing companies holding or applying for an ecolabel licence.

In special cases, Nordic Ecolabelling may conceal inspected chemicals and materials in the database. Where applicable, please contact Nordic Ecolabelling.

My Swan Account contains a list of all chemicals and materials that have been inspected and to which the printing companies have access. To have a chemical or material included in the database, the respective supplier or manufacturer must complete and submit this declaration. The documentation may be submitted directly to Nordic Ecolabelling. In signing this form, the supplier or manufacturer undertakes to keep the submitted information updated as long as the criteria are valid. This applies both in cases of changes to formulae/formulations and to extensions of e.g. an ink series.

Nordic Ecolabelling is, however, 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.

The final chapter of the criteria document contains explanations and definitions of words and terms that can be difficult to interpret. In case of uncertainty, always check The Nordic Swan Ecolabel definition.

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

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 sheet (supplier's user instructions) complying with the standards set out in Annex II of REACH (Regulation 1907/2006/EC) or other technical data sheet. Although addressing with ink is exempted from the requirement O5, safety sheet shall also be enclosed for ink used in addressing.

Type:

- | | |
|--|--|
| <input type="checkbox"/> Printing ink and additives | <input type="checkbox"/> Toner |
| <input type="checkbox"/> Ink* | <input type="checkbox"/> Varnish |
| <input type="checkbox"/> Dampening solution additive | <input type="checkbox"/> Algicide |
| <input type="checkbox"/> Adhesive | <input type="checkbox"/> Reprochemical |
| <input type="checkbox"/> Washing agent | |
| <input type="checkbox"/> Foil for foil printing | <input type="checkbox"/> Laminate |

Printing method

- | | |
|---|---|
| <input type="checkbox"/> Sheet fed offset (not envelopes/packaging) | <input type="checkbox"/> Coldset rotation (not forms/newspapers) |
| <input type="checkbox"/> Heatset rotation | <input type="checkbox"/> Gravure printing |
| <input type="checkbox"/> Flexographic printing (not envelopes) | <input type="checkbox"/> Offset, envelopes |
| <input type="checkbox"/> Digital printing/photocopying | <input type="checkbox"/> Envelope production with flexographic printing |
| <input type="checkbox"/> Coldset, newspapers | <input type="checkbox"/> Coldset, forms |
| <input type="checkbox"/> Offset, packaging | |

**Addressering with ink is exempted from the requirement and is also applied to out-of-house chemical finishing services. For inks used in addressering, safety data sheet complying with the standards set out in Annex II of REACH (Regulation 1907/2006/EC) or other technical data sheet has to be enclosed.*

1 General requirements for chemicals

1.1 Classified chemicals

Chemicals must not be classified as or meet the criteria for classification of any of the following hazard classes or categories with the associated risk and hazard phrases:

EU Dangerous Substances Directive and Dangerous Preparations Directive 67/548/EEC and 99/45/EC as amended		CLP Regulation 1272/2008	
Hazard class	Hazard designation and risk phrases	Hazard class and category	Hazard phrase
Environmental hazard			
Toxic to the environment	With N: R50, R50/53, R51/53, R59. R53, R52/53	Toxic to aquatic organisms - acute 1 Toxic to aquatic organisms – chronic 1/2/3/4 Dangerous to the ozone layer	H400, H410, H411, H420 (previously EU 059) H412, H413
Carcinogenic/mutagenic/toxic for reproduction (CMR)			
Carcinogenic Car1 and Car2	T with R45, R49	Carcinogenicity Carc 1A/1B	H350
Carcinogenic Car3	Xn with R40	Carcinogenicity Carc 2	H351
Mutagenic Mut1 and Mut2	T with R46	May cause genetic defects Muta 1A/1B	H340
Mutagenic Mut3	Xn with R68	May cause genetic defects Muta 2	H341
Toxic for reproduction Rep1 and Rep2	T with R60, R61	Toxic for reproduction Repr 1A/1B	H360
Toxic for reproduction Rep 3	Xn with R62, R63	Toxic for reproduction Repr 2	H361
Other toxicological properties			
	R64 (May cause harm to breastfed children) in combination with other R phrases	Toxic for reproduction – effects on or through breast feeding	H362
	R33 (May accumulate in body after repeated exposure) in combination with other R phrases	Specific target organotoxicity - repeated exposure 2	H373
Acutely deadly effects			
Very toxic	Tx with R26, R27, R28	Acute toxicity 1/2	H330, H310, H300
Toxic	T with R23, R24, R25	Acute toxicity 2/3	H330, H331, H311, H301

Non-mortal permanent injury after a single exposure			
Very toxic or toxic	Tx with R39 in combination with R26, R27, R28 T with R39 in combination with R23, R24, R25	Specific target organotoxicity – single exposure 1	H370
Harmful to health	Xn with R68 in combination with R20, R21, R22	Specific target organotoxicity – single exposure 2	H371
Serious harmful effects due to repeated or long-lasting exposure			
Toxic or harmful to health	T with R48 in combination with R23/R24, R25 Xn with R48 in combination with R20, R21, R22	Specific target organotoxicity - repeated exposure 1/2	H372, H373
Harmful to health	Xn with R65	Inhalation hazard 1	H304
Sensitising effects			
Local irritant	Xn with R42	Sensitising - respiration 1, A1 and 1B	H334
Local irritant	Xi with R43	Sensitising - skin 1, A1 and 1B	H317
Other hazards			
Toxic in contact with eyes	T with R39-41		EUH070
Develops toxic gas in contact with water	R29 in combination with other R phrases	Acute toxicity 1/2/3	EUH029
Develops toxic gas in contact with acid	R31 in combination with other R phrases	Acute toxicity 3	EUH031
Develops very toxic gas in contact with acid	R32 in combination with other R phrases	Acute toxicity 1/2	EUH032

Chemicals for film and form production are exempted from the requirement for classification with R43/H317, **H373**, **H411** and/or R52/R53/H412.

The requirement concerning classification of environmental hazards does not apply to printing inks, varnishes, toners and inks which are energy-curable (i.e. UV printing inks, UV toners, UV inks and UV varnishes), or algaecides. In the case of algaecides, however, the manufacturer's recommended dosage must be such that the product must be diluted so much in use that the strongest solution is not classifiable as environmentally harmful under the aforementioned R phrases. Toluene-based washing agents and printing ink for gravure printing are exempted from the requirement. Chemicals containing chrome trioxide and copper sulphate for the production of gravure printing cylinders are also exempted from the requirement. Adhesives containing isocyanates are also exempted providing that working conditions in gluing are appropriate. Working conditions shall be inspected during audit on-site.

Cobalt complex dyes in foils for foil printing are exempted from the requirement. The exception does not include cobalt compounds that are listed in EU's Candidate list. Inks which are energy-curable (UV inks) in inkjet machines are also exempted from the requirement.

Washing agents are exempted from the requirement for classification with R65 or similar hazard phrase H304. In digital printing with wet toner, production chemicals that contain mineral oil are exempted from the requirement for classification with R65/H304.

The requirement concerning classification of sensitising properties (R42 and R43) does not apply to printing inks, varnishes, toners and inks that are energy-curable, such as i.e. UV printing inks, UV toners, UV inks and UV varnishes, to two-component adhesives as well as to algacides and dampening solution additives that according to the manufacturer's recommended dosage are diluted that the solution is not to be classifiable.

Legally binding classifications of substances within the European Union can be found on the European Commission's ESIS website (European Chemical Substances Information System):
<http://esis.jrc.ec.europa.eu/index.php?PGM=cla>

Proposals for self-classification of environmental hazards for a number of substances can be found on a website compiled by the Nordic Council of Ministers in collaboration with the European Chemicals Bureau: <http://apps.kemi.se/nclass/>

Typical examples of CMR substances include halogenated organic substances and certain phthalates (e.g. DEHP, DBP and BBP). Moreover, many of these substances are environmentally harmful. Other environmentally harmful substances include lead and lead compounds.

☒ In the case of exemptions for algacides and dampening solution additives: please attach calculation of the concentration in the solution.

1.2 Particularly problematic constituents

EDTA and its salts, sodium or calcium hypochlorite, poly and perfluorinated alkylated substances* or alkylphenolethoxylates and derivatives thereof must not be added to chemicals and materials. Moreover, constituent substances categorised in REACH (Registration, Evaluation and Authorisation of Chemicals) as substances of very high concern (SVHC) and similar substances must not be added to chemicals and materials, i.e.:

1. Category 1 or category 2 CMR substances (1A and 1B in CLP). Moreover category 3 CMR substances (category 2 in CLP) are also included even if they are not classified as SVHC substances in REACH.
2. PBT substances (persistent, bioaccumulative and toxic) and/or vPvB substances (very persistent and very bioaccumulative) in accordance with the criteria in Annex XIII of REACH (regulation 1907/2006/EC).
3. Substances considered to be hormone-disruptive or potentially hormone-disruptive in accordance with the European Union's reports and lists concerning hormone-disruptive substances.
4. Substances recorded on EU's Candidate List and not meeting the requirements in Section 1 - 3.

Toluene in washing agents and printing inks for gravure printing are exempted from the requirement. Chemicals containing chrome trioxide for the production of gravure printing cylinders are also exempted from the requirement. Isocyanates in adhesives are also exempted from the requirement. EDTA and its salts in chemicals for film and form production can be used if the share of EDTA and its salts does not exceed 5% (percentage of weight) in the chemical product.

Cobalt complex dyes in foils for foil printing are exempted from the requirement. The exception does not include cobalt compounds that are listed in EU's Candidate list. Inks which are energy-curable (UV inks) in inkjet machines are also exempted from the requirement.

** Note the national legislations concerning PFOA in the Nordic countries. In Norway PFOA is regulated in «Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften)», §2- 32.*

Regarding CMR classification, see classification requirements above.

As regards PBT or vPvB substances, see the list of substances fulfilling or substances that form substances fulfilling the PBT or vPvB criteria on the ESIS website (European Chemical Substances Information System). Substances that are "deferred" or substances that are "under evaluation" are not considered to have PBT or vPvB properties.

<http://esis.jrc.ec.europa.eu/index.php?PGM=pbt>

In the event of amendments, the most recently updated version will apply.

Typical examples of PBT or vPvB substances are brominated flame retardants.

As regards hormone-disruptive effects, see for example the EU's priority list of substances with hormone-disruptive effects in Annex L of the Final Report of the DHI study on:

http://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf

Substances in categories 1 and 2 are regarded as hormone-disruptive. Please note that the EU list of hormone-disrupting substances has a class 3, for which the assessment is: "No scientific basis for inclusion on the list. Data available, but do not indicate a scientific basis for inclusion on the list". These substances are not considered hormone-disruptive. In the event of amendments, the most recently updated version will apply.

Typical examples of hormone disruptive substances are various phthalates (e.g. DEHP, BBP, DBP, DINP and DNOP).

As regards the "Candidate List", please see the website of the European Chemicals Bureau:

http://echa.europa.eu/chem_data/candidate_list_table_en.asp

For information on monitoring of SVHC, please see the "Intention List" (Registry of Intentions).. This list is not binding for Nordic Ecolabelling purposes, unless the substance appears on some of the other lists above, but it may be useful to stay ahead of developments:

<http://echa.europa.eu/addressing-chemicals-of-concern/registry-of-intentions>

1.3 Volatile organic compounds VOC

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

The term organic compounds should be understood to mean organic compounds with a vapour pressure > 0.01 kPa (at 20°C) or with equivalent volatility in particular usage situations (e.g. the solvents/mineral oils in heatset inks when heated in the heatset kiln).

If a chemical only partially contains VOC, the weight percentage of the VOC components is indicated as the VOC content. For example, if a washing agent 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 heatset inks, the printing company must as standard assume that the heatset ink contains 50% mineral oils, unless otherwise specified. It is the mineral oils which become VOCs in the heating kiln. In the case of other inks and varnishes, information from safety data sheets can be used (highest value if a range).

Does the chemical contain VOC? Yes _____ No _____

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

2 Specific requirements

2.1 Printing inks, toners, inks, varnishes, foils and laminates

Residues of heavy metals

The content of the heavy metals, lead, cadmium, mercury and chromium with an oxidation stage 6 must in total not exceed 100 ppm (milligrams per kilogram) in printing inks, toners, inks, foils for foil printing and laminates.

Residues of aromatic amines (from e.g. azo colours)

The content of primary unsulphonated aromatic amines soluble in 1M hydrochloric acid and expressed as aniline must not exceed 500 mg/kg and there must be no more than 10 mg/kg Benzidine, β -Naphthylamine and 4-Aminobiphenyl in printing inks, toners or inks.

Test method in accordance with European Council resolution AP (89) 1. The document refers to ETAD's test method no. 212 (7): Determination of unsulfonated primary aromatic amines in pigments and in solvent soluble dyestuffs intended for use in food packaging, November 1984. Later versions of this test method can also be used.

Vegetable or water-based printing inks, varnishes, toners and ink

The practising company is awarded points for printing inks, varnishes, toners and inks which are vegetable or water-based:

Type	Points	Mark with a cross
Vegetable	5	
Water-based	5	
Not water-based or vegetable	0	

Vegetable printing inks and varnishes have maximum 2.0% by weight of solvents which are mineral oil based. Mineral oil based means that the content of oil or solvent in the printing ink is derived from mineral oil.

Recyclability, vegetable, water-based

The practising company is awarded points for printing inks, varnishes, toners and inks:

Type	Vegetable	Water-based	Recycling	Total points	Mark with a cross
Non energy curable printing inks, varnishes, toners and inks					
Vegetable printing inks, varnishes and inks that are documented not to create problems in the recycling process (does not, however, apply to metallic printing inks and fluorescent printing inks)	5	0	7	12	
Water-based printing inks, varnishes and inks that are documented not to create problems in the recycling process	0	5	7	12	
Other vegetable printing inks, varnishes and inks	5	0	5	10	
Other water-based printing inks and inks	0	5	0	5	
Other water-based varnishes	0	5	7	12	
Mineral oil-based printing inks, varnishes and inks including those based on petroleum solvents	0	0	7	7	
Metallic printing inks and fluorescent printing inks	0-5	0	2	2-7	
Dry toner	5		7	12	
Wet toners that are documented not to create problems in the recycling process in accordance with the test methods in Appendix 1	0-5	0	7	7-12	
Other wet toners	0-5	0	0	0-5	
Energy curable (e.g. UV) printing inks, varnishes, toners and inks					
Water-based (e.g. hybrid water based) printing inks/varnish/toners/inks and non-water-based (e.g. UV, hybrid solvent based) documented not to create problems in the recycling process.	0-5	0-5*	7	7-12	
Other water-based (e.g. hybrid water based) printing inks/varnishes/toners/inks	0	0-5*	1	1-6	
Other non-water-based (e.g. UV, hybrid solvent based) printing inks/varnishes/toners/inks.	0-5	0	1	1-6	

*) UV printing inks, varnishes etc. may score points only as water-based if they are not classified as environmentally harmful.

Do test results exist in accordance with the specifications in Section 3 showing that the product does not cause problems in the recycling process? Yes ____ No ____

☐ If yes, please attach test report showing this as well as documentation/certificate for the laboratory.

2.2 Adhesives

Recyclability

The practising company is awarded points for recyclability in accordance with the table below:

Type	Points	Mark with a cross
Adhesive documented as not leading to problems in the recycling process, including pressure sensitive adhesive, in accordance with test methods referred to below in section 3:	3	
Hot-melt adhesive or PUR adhesive (polyurethane adhesive):	2	
Water-soluble adhesives (e.g. dispersion adhesive):	1	

Do test results exist in accordance with the specifications in Section 3 showing that the product does not cause problems in the recycling process? Yes ____ No ____

Note that if the adhesive is pressure sensitive, test results must be submitted.

☐ If yes, please attach test report showing this as well as documentation/certificate for the laboratory.

2.3 Algicides and dampening solution additives

Bioaccumulability

Active substances (biocides) in algicides and dampening solution additives must not be potentially bioaccumulable (a bioaccumulable substance has $BCF \geq 100$ or $\log K_{ow} \geq 3.0$).

Specify chemical name and/or CAS no. for biocide:

Allergy

The practising company is awarded points for dampening solution additives that are not allergenic.

Type	Recommended dilution	Points	Mark with a cross
Dampening solution additives that are not classified as allergenic (risk phrases R42 or R43) or which, in accordance with the manufacturer's recommended dosage are diluted so much in use that the strongest solution could not be classified as allergenic		1	
Other dampening solution additives	-	0	

Dampening solution additives are chemicals that are added to the dampening solution. Examples include alcohol (IPA, isopropyl alcohol) or other chemicals with a similar function. They also include chemicals to which the dampening solution has been added as softener.

- ☒ Please attach calculation of the solution if the dampening solution additive has been classified as allergenic.

2.4 Washing agents

Washing agent points

The practising company is awarded points depending on volatility (vapour pressure). The points score is a weighting of the vapour pressure at 20°C for the components in the washing agent. Please indicate the quantities of the various components and the points score for the washing agent:

Components and vapour pressure	Points	Chemical name and, where applicable, CAS no.	Content in % by weight	Weighted points
Organic solvents > 5.0 kPa	0			
Organic solvents 0.31 - 5.0 kPa	0,5			
Organic solvents 0.21 – 0.30 kPa	1			
Organic solvents 0.06 – 0.20 kPa	1,5			
Organic solvents 0.01 – 0.05 kPa	2			
Organic solvents < 0.01 kPa	2,5			
Other components	2,5			
Total			100%	

*E.g. If a washing agent contains 35% A (1 point) and 65% B (1.5 points), the points score for the washing agent will be $1 * 0.35 + 1.5 * 0.65 = 1.3$.*

3 Test methods

Test methods for recyclability

The test laboratory must meet the general requirements in standard DS/EN ISO/IEC 17025 or be an official GLP-approved laboratory.

The chemical manufacturer's laboratory may be approved to perform these analyses if the authorities are given an opportunity for monitoring. The manufacturer's laboratory may also be approved if it is covered by a quality management system and this is certified in accordance with ISO 9001 or ISO 9002.

Test methods for recycling must be those specified below or updated publications from INGEDE (see also www.ingede.org) and ERPC (www.paperrecovery.org).

Test methods may also be used if a competent and independent third party has demonstrated in writing that they can reproduce results according to the methods of INGEDE and ERPC.

In the case of printing inks and varnishes, INGEDE Method 11 "Assesment of Print Product Recyclability - Deinkability Test" applies. January 2007 or later editions.

Testing must be performed on 3 types of paper: uncoated, coated and surface-sized paper. If a type of printing ink is only sold for one or two specific types of paper, it is sufficient to test the paper type(s) in question.

Mark with a cross the paper types with which the printing ink can be used and the paper types that have test results showing that the product is non-problematic in the recycling process:

Type	Paper types	Are test results available?
Uncoated		
Coated		
Surface-sized		

Nordic Ecolabelling requires a result of least 51 points in accordance with ERPC's points system for all tested paper types. This corresponds to “Good” or “Fair” de-inking. See Assessment of Printed Product Recyclability – Deinkability Score – User’s Manual, ERPC/005/009, Adopted in 17/03/2009 ERPC Meeting or subsequent versions.

INGEDE Method 12 ”Assessing the Recyclability of Printed Products - Testing of Fragmentation Behaviour of Adhesive Applications”, June 2009 or later versions applies to non-water-soluble adhesives. This method consists of testing glued printed matter. Testing must be performed on a type of printed matter that is representative for the adhesive in question.

Nordig Ecolabelling requires a result of least 51 points in accordance with ERPC's points system. This corresponds to “Good” or “Fair” removal of adhesive. See Assessment of Printed Product Recyclability – Scorecard for the removability of Adhesives Applications, adopted at the April 2011 ERPC meeting or subsequent versions.

Producer

Name:	Country:
Address:	
Tel/Fax:	E-mail:
Contact:	

Please note that the producer will *not* appear in the Nordic print database unless the producer is also a signatory of this form and has not stated the distributor/supplier.

Signature

We declare that the requirements have been met and that the information provided is correct.

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:	
Tel/Fax:	Date:
E-mail:	
Signature:	
Name in block letters:	

Please note that the signatory company will appear in My Swan Account unless otherwise stated under distributor/supplier at the head of the form.

E-mail

Ecolabelling Denmark	info@ecolabel.dk
Motiva Services Oy (Finland)	joutsen@ecolabel.fi
Norræn Umhverfismerking (Iceland)	ust@ust.is
Stiftelsen Miljømerking (Norway)	info@svanenmerket.no
Miljömärkning Sverige AB (Sweden)	info@svanen.se

Appendix 2 Waste plan for practising company (O10)

Waste plan for _____ (name of printing company)

Waste area and type	Appears in operations	Processed together with the following waste types*	Quantity of waste	Waste handler
Film production				
Reprochemicals	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Film and film scrap	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Rinsing water	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Filters	<input type="checkbox"/> Yes <input type="checkbox"/> No			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Printing form production				
Plate developer	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Used rinsing water	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Block residues (flexo)	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Copper/chromium residues in sludge (gravure printing)	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Filters	<input type="checkbox"/> Yes <input type="checkbox"/> No			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Printing				
Printing ink residues (liquid)	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Printing ink cans	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Varnish residues (liquid)	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Used washing agent solution	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Used dampening solution	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Other chemical residues	<input type="checkbox"/> Yes <input type="checkbox"/> No			

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Waste area and type	Appears in operations	Processed together with the following waste types*	Quantity of waste	Waste handler
Rags and cloths	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Waste paper	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Filters	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Used toner and toner cassettes	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Used printing forms (e.g. plates)	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Used ink cartridges	<input type="checkbox"/> Yes <input type="checkbox"/> No			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Finishing				
Waste paper	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Adhesive and varnish residues	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Rags and cloths	<input type="checkbox"/> Yes <input type="checkbox"/> No			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Other				
Soft plastic	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Metal	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electronics	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Hard plastic	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Board	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Batteries	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Fluorescent tubes	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Mixed waste (ungraded	<input type="checkbox"/> Yes <input type="checkbox"/> No			

Nordic Ecolabelling
Printing companies, printed matter, envelopes and converted paper products
Version 5

Waste area and type	Appears in operations	Processed together with the following waste types*	Quantity of waste	Waste handler
waste that is burned or dumped). E.g. used tissue paper, dried ink, etc.				
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			

*) Please indicate whether the waste type in question is disposed of together with other types of waste specified on the form. If so, state the other type.

**) The quantity need not be stated – it is voluntary unless you want to be awarded points for ungraded waste quantity.

Appendix 3 Procedures and instructions (M1-M13)

This form shows examples of procedures and instructions to be used to meet the requirements for environmental management.

Access to My Swan Account:

User id: _____

Password: _____

Documents relating to the application and other information relevant to the application such as journals etc. are to be found at the following physical/electronic location (M4): _____

1 Legislation and authorities (M1)

Name of supervisory environmental authority:

Address: _____

Contact point, where applicable:

Name of supervisory working environment authority:

Address: _____

Contact point, where applicable:

2 Organisation and responsibility at printing company (M2)

Contact for Nordic Ecolabelling:

Person responsible for environmental matters:

Person responsible for quality matters:

Person responsible for marketing matters:

Person responsible for day-to-day operations:

In the event of changes in areas of responsibility, the contact must notify Nordic Ecolabelling as soon as the change has been implemented.

3 Procedures for documenting, processing and reporting non-conformities, complaints and changes (M5)

The purpose of these procedures is to ensure that the requirements for The Nordic Swan Ecolabel continue to be fulfilled in the event of non-conformities, complaints and changes.

The procedures cover all printing by the practising company.

- The contact person is responsible for documenting and processing non-conformities and changes as well as all reporting to Nordic Ecolabelling. This responsibility may be delegated.
- _____ (name) is responsible for documenting and processing complaints. This responsibility may be delegated.

Changes

- In the event of major changes to the information on which the original application for a Nordic Ecolabel was based, the contact must notify Nordic Ecolabelling in writing before the change is implemented. Major changes will typically occur where a printing company adds a new printing method and where the practising company finds itself close to:
 - a triviality limit (chemicals, finishers and suppliers of printing services)
 - a total score threshold
 - a requirement threshold (a minimum threshold for the proportion of inspected/ecolabelled paper, VOC requirements for the installation of extraction and energy requirements)
- Nordic Ecolabelling will determine whether a change necessitates an amendment/extension application.
- If Nordic Ecolabelling determines that the change constitutes a major change, the contact person must file a duly completed and signed application form for an amendment/extension of the licence.
- The change will be implemented only when a reply has been received from Nordic Ecolabelling. The contact must ensure that all correspondence with Nordic Ecolabelling is documented and filed together with the original application (e.g. is uploaded in My Swan Account).

Non-conformities

- In the event of non-conformities, the contact must notify Nordic Ecolabelling in writing immediately after the non-conformity is discovered and upload a non-conformity report in the electronic application aid My Swan Account. A non-conformity occurs when one or more of the ecolabelling criteria cease to be met. For example if the annual report shows that the practising company is exceeding:

- a triviality limit (chemicals, finishers and suppliers of printing services)
- a total score threshold
- a requirement threshold (a minimum threshold for the proportion of inspected/ecolabelled paper, VOC requirements for the installation of extraction and energy requirements)

or if the practising company has omitted to draw up an annual report or has failed to fulfil the special requirements applicable to Nordic Swan Ecolabelled printed matter.

- The non-conformity report contains a description of the nature of the non-conformity, an account of its scope, a description of how the non-conformity occurred, a description of what steps have been taken to remedy the non-conformity and a plan for avoiding similar non-conformities in the future.
- If the plan encompasses changes in relation to the original application, the contact will treat this in the same way as a planned change.
- The contact must ensure that all correspondence with Nordic Ecolabelling is documented and filed together with the original application (e.g. is uploaded in My Swan Account).

Complaints

- In the event of written complaints, the person responsible will submit a reply to the person who has filed a complaint. The reply will contain a decision about the complaint and information, if any, on compensation and a reasoned statement of the decision.
- The responsible person will see to it that all written complaints are documented and kept with the original application.
- If the complaint gives rise to changes to internal working procedures, the contact person responsible for Nordic Ecolabelling will be informed.

4 Procedures for ensuring traceability (M13)

The purpose of these procedures is to ensure that printed matter bearing The Nordic Swan Ecolabel is kept separate from non-labelled printed matter

The procedures cover all printing by the practising company.

The Nordic Swan Ecolabelling contact is responsible for ensuring that orders bearing The Nordic Swan Ecolabel are marked clearly to enable them to be kept separate from other orders. This responsibility may be delegated.

5 Procedures for recordkeeping and maintenance of the licence (M5 - M6)

The purpose of these procedures is to ensure that record keeping is correct and that the requirements in the criteria are met.

The procedures cover all printing by the practising company.

The Nordic Swan Ecolabelling contact is responsible for record keeping and for investigation whether the ecolabelling criteria continue to be fulfilled.

This responsibility may be delegated.

- While the ecolabelling licence remains in force, the printing company shall ensure that the requirements in the criteria are met. At least once a year (no later than 6 months after the closing of the accounts), an internal review of operations has to be done. The contact investigates whether the ecolabelling criteria continue to be fulfilled.
- If the criteria are not fulfilled, a non-conformity will have occurred (see section 3, Procedures for documenting, processing and reporting non-conformities, complaints and changes).
- The contact must ensure that material such as invoices, reports, measurements or excerpts from the accounting system and operating logs are stored together with the original application for as long as the ecolabelling licence remains in force, for inspection, if applicable, by Nordic Ecolabelling.

6 Training procedures (M7)

The purpose of these procedures is to ensure that training is provided.

The procedures cover all printing by the practising company.

The Nordic Swan Ecolabelling contact is responsible for ensuring that all persons involved in day-to-day operations have been given the necessary information to ensure that The Nordic Swan Ecolabelling requirements are met.

This responsibility may be delegated.

Training has been implemented (specify how and when):

Participants (specify names of personnel and their functions):

Training of new personnel will take place (specify how and when):

The training comprises:

- General introduction to Nordic Ecolabelling
- Key score options and mandatory requirements concerning:
 - Energy
 - Paper
 - Chemicals
 - Waste paper
 - Organic solvents
 - Waste
- Procedures in the event of changes of subcontractors
- Procedures in the event of changes in chemicals

In addition, training encompasses:

7 Procedures for marketing (M8)

The procedures for marketing are removed as decided by the Board of Directors 17 November 2014.

Appendix 4 Declaration from finishing suppliers (O3)

This form is for use by finishing suppliers of gluing, varnishing, foil printing and laminating services as well as suppliers of addressing with printing inks or toners to document Nordic Ecolabelling's requirement for the main external finishers to be inspected. Suppliers of mechanical finishing services are not encompassed by this requirement.

My Swan Account contains a list of all inspected finishers to which printing companies have access. If a printing company needs a finisher to be included in the list, the supplier must complete and submit this declaration with associated documentation. The declaration and the documentation may be submitted directly to Nordic Ecolabelling.

Company name:	
Address:	
Tel:	E-mail:
Contact:	

In the event of a change in the contact or other changes in the contact information, fresh confirmation must be sent to the ecolabelling organisation.

Chemicals and materials

The supplier must maintain a list of varnishes, adhesives, foils for foilprinting and laminates used by the supplier. If printing inks or toners for addressing of customers' printed matter are used, these chemicals must also be included in the list.

All chemicals (adhesives, varnishing, **foil** blocking or laminating, as well as addressing with printing inks or toners on printed matter or its package) and materials must be checked by Nordic Ecolabelling and must fulfil the requirements provided for in O5 and Appendix 1 as well as the requirement for pressure sensitive adhesives in O6 of the current Criteria document for printing companies. Addressing with ink is exempted from the requirement and is also applied to out-of-house chemical finishing services. For addressing ink, safety data sheet complying with the standards set out in Annex II of REACH (Regulation 1907/2006/EC) or other technical data sheet has to be enclosed.

Requirement O5 contains information on triviality limits, which also apply to suppliers of finishing services.

“In the case of printing inks, foils, laminates, varnishes, adhesives, toners and ink, at least 95 weight per cent of annual purchases/incoming quantities in each category must fulfil the requirements. Printing inks, toners and ink are included within the same category. For printing inks, adhesives and varnishes an alternative triviality limit of 10 kg per annum and per category applies, for which the requirements do not have to be met”

The O5 requirement that stores may contain a maximum of 5 per cent by weight of old chemicals/materials which do not meet the requirements does not apply to external suppliers of finishing services.

My Swan Account contains details of inspected chemicals and materials. In order for a chemical or material to be recorded in the database, the supplier/producer must fill in information in the electronic application aid My Swan Account.

☒ Please attach a list of used varnishes, adhesives, foils for foilprinting and laminates. The list must also include printing inks and toners used for addressing. Amounts must also be stated if the chemicals/materials within a category do not fulfil the requirements. For addressing ink, safety data sheet complying with the standards set out in Annex II of REACH (Regulation 1907/2006/EC) or other technical data sheet has to be enclosed.

We confirm that the business operates in compliance with the regulations of the authorities. We also confirm that the attached list of chemicals and materials are those used in the business and that we will notify Nordic Ecolabelling in the event of any changes. We confirm that materials containing PVC are not used for laminating or packaging paper printed matter (requirement O7) and that PVC materials (requirement M10) are not used for printed matter to be labelled with The Nordic Swan Ecolabel.

Date:
Signature:
Name in block letters:

E-mail:

Ecolabelling Denmark

info@ecolabel.dk

Motiva Services Oy (Finland)

joutsen@ecolabel.fi

Norræn Umhverfismerking (Iceland)

ust@ust.is

Stiftelsen Miljømerking (Norway)

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Miljömärkning Sverige AB (Sweden)

info@svanen.se

Appendix 5 Inspected paper (P1)

Appendix 5 is for use by paper producers who are applying to Nordic Swan Ecolabelling for inspection of their paper as printing material for use by Nordic Swan Ecolabelled printing companies. Appendix 5A is to be used as an application form and 5B as a chemical requirements declaration.

Only paper which 1) has been awarded a Nordic Swan Ecolabel licence and 2) meets the requirements for inspected paper must be used in Nordic Swan Ecolabelled printed matter (however, paper labelled with the EU Ecolabel can be used until 31 December 2013). Inspected paper must meet the requirements of A or B below.

A list of inspected paper grades has been published on Nordic Ecolabelling's publicly available web portal. A fee is charged for inspection and publication of paper grades.

Definition of inspected paper

Paper grades eligible for inspection are defined in the Supplementary module for copying and printing paper, version 4:

- Wood-pulp and wood-free non-converted printing paper produced from chemical and/or mechanical pulp and/or recycled fibre, for, printing.
- The following boards produced from chemical and/or mechanical pulp and/or recycled fibre:
 - o Homogeneous board SBB (Solid Bleached Board), SBS (Solid Bleached sulphate) and SUB (Solid Unbleached Board)
 - o FBB (Folding Boxboard)
 - o Board based on recycled fibre WLC (White Lined Chipboard)

Requirements for inspected paper

- A. **Inspected paper** must meet all requirements in the Basic module for paper products, version 2, and the Chemical module, version 2, with the following exceptions:
1. Requirements for carbon dioxide emission from transport cease (K11 in the Basic module version 2).
 2. The documentation requirements for K1-K14 in the Chemical module, version 2, has been changed to the effect that documentation must instead be a list of all the chemicals used with brand names, suppliers, function, and quantities used. Electronic application aid in My Swan Account shall be used to document the requirement. Chemical suppliers must also use electronic application aid for suppliers in My Swan Account for inspection of chemicals.
 3. Nordic Ecolabelling reserves the right to claim further documentation for the chemicals to check that they fulfil the requirements.
 4. The definition of special paper and niche products in K4 in the Supplementary module for copying and printing paper version 4 also applies to inspected paper.

B. Paper already labelled with the EU Ecolabel must fulfil the following requirements of the Basic module for paper products, version 2:

1. Requirement for fibre raw material (K7 in the Basic module version 2)
2. Requirement for total energy points (K9 in the Basic module version 2)
3. Requirement for CO₂ emission (K10 in the Basic module version 2) with the exception of transports (K11 in the Basic module)
5. Requirement for chemicals (K1-K14 in the Chemical module version 2)
The documentation requirements for K1-K14 in the Chemical module, version 2, has been changed to the effect that documentation must instead be a list of all the chemicals used with brand names, suppliers, function, and quantities used. Chemical suppliers must use electronic application aid for suppliers in My Swan Account for inspection of chemicals.
Nordic Ecolabelling reserves the right to claim further documentation for the chemicals to check that they fulfil the requirements.

Information regarding inspection of paper

There should be no risk that inspected paper is regarded as a Nordic Swan Ecolabelled product. The paper producer must comply with Nordic Ecolabelling's rules governing information of inspected paper. The rules can be obtained from Nordic Ecolabelling.

5A Application for inspected paper

Is the paper EU ecolabelled? Yes ____ No ____

If yes, please state licence number:

Paper producer:

Factory/production site:.....

☐ Paper

☐ Cardboard

Trade names*	Distributor's trade name, if applicable	Distributor/supplier	All grammages**

*) Paper grades applied for must be given a unique trade name in order to avoid mixing inspected paper with uninspected paper.

**) The grammages comprised must be stated.

Documentation referred to in the requirements in Appendix 5 under the criteria for printing companies and printed matter, version 5, must be submitted to Nordic Ecolabelling for control.

Signature by paper producer:

We apply for inspection of the above paper grade(s) in accordance with Nordic Ecolabelling's criteria for printing companies and printed matter and accept that trade names of the inspected paper be published on Nordic Ecolabelling's web portal.

We confirm that the above paper grade(s) is produced only at the stated factory/production site. If the contract is replaced, please inform Nordic Ecolabelling.

We confirm that the business operates in compliance with the regulations of the authorities. We also confirm that the attached documentation is correct and that we will notify Nordic Ecolabelling in the event of changes.

Date

Signature

Company name:	
Address:	
Contact:	
Tel:	E-mail:

5B Declaration on chemicals

The paper producer applying for inspection of its printing paper in accordance with Nordic Ecolabelling's requirements in the criteria for printing companies and printed matter must account for all production chemicals, providing complete names. The declaration must contain all chemicals used in the production of paper. The pulp producer must make a separate statement on the pulp production chemicals. The requirements also apply to internal and external water purification.

List of production chemicals:

Name of chemical	Function	Producer/supplier	Quantity added (kg/ton)	Classification

Signature by paper/pulp producer:

We declare that the above list covers all our production chemicals and that the classification stated is correct.

We also declare that the production chemicals fulfil the requirements K2–K14 in the Chemical module, version 2.

Date

Signature

Company name:	
Address:	
Contact:	
Tel:	E-mail:

Appendix 6 Declarations by printing company

We hereby confirm that we are in compliance with the following requirements:

Requirements as to packaging and laminates made of plastic (O7):

Packaging and laminates for use on printed matter made of paper must not contain PVC.

Requirement as to Nordic Swan Ecolabelled printed matter (M9-M13):

A minimum of 90% of the total weight of The Nordic Swan Ecolabelled printed matter must consist of inspected or Nordic Swan Ecolabelled paper. Paper with the EU Ecolabel can only be used if there is documentation demonstrating that the paper also complies with The Nordic Swan Ecolabelling requirements for inspected paper. In the case of books, folders, ring binders, notepads and forms, the requirement is 80%.

See inspected and Nordic Swan Ecolabelled paper grades on My Swan Account:

*<https://account.svanen.nu> Paper with the EU Ecolabel can be found on the EU Ecolabel website.
www.eco-label.com*

Nordic Swan Ecolabelled printed matter must not contain PVC.

Fragrance/scent must not be added to Nordic Swan Ecolabelled printed matter (e.g. scented varnish). Packaged product samples with fragrance, attached to an item of printed matter, or removable scratch samples, are not encompassed by this.

All printer suppliers used in the production of printed matter and bearing The Nordic Swan Ecolabel must be licensed to use The Nordic Swan Ecolabel. All external finishers encompassed by O3 must be inspected.

If only part of the output of the printing company carries The Nordic Swan Ecolabel, orders bearing The Nordic Swan Ecolabel must be marked clearly to enable them to be separated from other orders. Information must also be displayed disclosing the paper grades and sub-contractors used and the way in which The Nordic Swan Ecolabel logo is reproduced on the items of printed matter (e.g. with the aid of order notes or order bags).

Requirements as to use of The Nordic Swan Ecolabel logo on packaging:

The Nordic Swan Ecolabel logo must as a general rule not be placed on Nordic Swan Eco-labelled packaging since confusion may arise about what The Nordic Swan Ecolabel applies to.

Company name:	
Address:	
Contact:	
Tel:	E-mail:
Person in charge of marketing:	
Tel:	E-mail:
Date:	

In the event of personnel changes, a new confirmation must be submitted to the ecolabelling organisation.

Appendix 7 Calculations and examples

Inspected finishing based on financial figures

The proportion of inspected finishing can be estimated from an overall knowledge of expenses paid to book binders which perform gluing, varnishing, foil printing or laminating. The following method may also be used:

1. In the accounting system find the expenses paid annually to those suppliers which are regarded as covering most of the specified types of finishing.
2. Assess the cost of in-house finishing by using '8%- rule' of the requirement P2.
3. If some suppliers also produce other things besides the specified type of finishing, e.g. printing, it is estimated what proportion of the expenses are paid out for this. This part of the expenses is deducted from the expenses paid to that particular supplier.
4. All the identified expenses are added and subsequently the proportion of the specified type of finishing performed by the various suppliers is calculated as well as the proportion carried out in-house.

Waste paper and energy consumption allocated between multiple printing methods

Waste paper must be calculated in accordance with the instructions in P2 and energy consumption in accordance with the instructions in P9. If it is not possible to calculate waste paper and energy consumption for each individual printing method, the following average figures must be used to calculate the distribution between the various methods. The calculation is based on the relationship between the average figures for the printing methods in question. Please note that the electronic application aid in My Swan Account performs these calculations:

Printing method	Average waste paper (%)	Average energy consumption (kWh/tonne of product)
Sheet fed offset (except packaging and offset printing of envelopes)	23	1253
Coldset, newspapers	10	365
Coldset, forms	18	997
Coldset rotation (except newspaper and form printing)	19	825
Heatset rotation	21	965
Gravure printing	12	864
Flexographic printing (except envelope production)	11	486
Digital printing	10	2592
Offset printing, envelopes	4	436
Envelope production with flexography	15	552
Offset, packaging	36	1564

Example 1: If a printing company uses 500 tonnes of paper for sheet fed offset and 100 tonnes for digital printing and the total amount of waste paper is 100 tonnes, then the allocation will be 8.0 tonnes waste paper from digital printing and 92.0 tonnes from sheet fed offset because:

$$10/23 = (8.0/100)/(92.0/500) \text{ and}$$

$$8.0+92.0 = 100$$

The waste paper percentage for digital printing will be 8.0% and for sheet fed offset it will be 18.4%.

Example 2: If a printing company has 150 tonnes of waste paper and a total energy consumption of 700 000 kWh and uses 1 000 tonnes of paper to produce envelopes by flexographic printing and prints 400 tonnes of envelopes by offset printing and 50 tonnes by digital printing, the allocation of energy consumption will be 430 696 kWh for flexographic printing, 153 685 kWh for offset printing and 115 619 kWh for digital printing because:

$$552/436 = (430,696/(1000-1000*15/100))/(153,685/(400-400*4/100)) \text{ and}$$

$$436/2799 = (153,685/(400-400*4/100))/(115,619/(50-50*10/100)) \text{ and}$$

$$430,696+115,619+153,685 = 700,000$$

The energy consumption for envelope production with flexographic printing will be 496, for offset printing 398 and for digital printing 2 535 kWh/tonne of product.

Calculation of waste paper from external finishing

Waste paper is calculated in accordance with instructions in P2.

Example 1: A printing company purchases 3 400 tonnes of paper per year. Of this, the printing company sends semi-manufactured products based on 800 tonnes of used paper to an external book binder and performs finishing on the remaining production (corresponds to 2 600 tonnes of used paper). The waste paper at the printing company, including the printing company's own finishing, weighs 900 tonnes.

According to the standard value method in the criteria the print waste paper must be multiplied by 2. Accordingly, in the example, the print waste paper will amount to 510 tonnes and the total waste paper will accordingly be 1 020 tonnes or 30%. This means that 120 tonnes of waste paper is generated externally.

These figures can be determined by looking at the percentage share of print spoilage (x) in the following: $800*x+2\,600*x*2=900$. The percentage of print spoilage will be $x=15\%$, which corresponds to 510 tonnes. If the printing company had not included the external finishing, the waste paper percentage would be only approximately 26%.

Example 2: A printing company has expenses of 500 000 for book binding and a turn-over of its own of 20 million. The financial calculation entails that $0.5/(20*0.08)=31.25\%$ of paper consumption is finished externally. Using figures from the example, this means that 1 062.5 tonnes of paper is used on orders that are finished externally.

Calculation of VOC emissions

If the printing company sells recycled VOC or removes VOC from outgoing air with the aid of, for example, incineration (e.g. heatset) or removes or sells VOC by some other controlled means (e.g. condensation in connection with certain digital printing facilities with wet toner), these quantities may be deducted from the quantities purchased/received. Below is a specification of the calculation method for selected printing techniques, but other printing techniques may also be deducted on the said assumptions.

As an example, certain heatset printing companies collect ink waste and send it for incineration under controlled conditions. Consequently, the quantity of VOC in the ink waste may be deducted if this quantity can be documented.

Heatset printing companies must measure emissions of VOC and add the result of these measurements to the purchased/received quantities.

Heatset with afterburning

If a heatset printing company has an integrated afterburner, the company may assume as a standard value that 100% of the substances in the printing inks that are converted to VOC in the heatset kiln as well as other VOCs drawn into the kiln (see below) will be incinerated and can accordingly be deducted. However, the quantity of VOC emitted must be measured in accordance with the instructions found here and the results must be added to the VOC consumption.

If the heatset printing company does not have an integrated afterburner, it may be that the afterburner is not operating even though production is in progress. Accordingly the printing company must assume as a standard value that 90% of the substances in the printing inks that are converted to VOC in the heatset kiln and 90% of other VOCs drawn into the kiln (see below) will be incinerated unless other figures can be demonstrated by recording the performance of the afterburner. However, the quantity of VOC emitted must be measured in accordance with the instructions below and the results must be added to the VOC consumption.

Unless other figures can be shown to apply, the printing company must assume that 85% of the mineral oil content of the printing ink is converted to VOC in the heatset kiln. Information on the mineral oil content of printing inks used in heatset can be found in My Swan Account.

All heatset printing companies with flue gas treatment

In the case of heatset printing companies with flue-gas treatment, the printing company must assume that up to 10% of the VOC in the dampening solution, 15% of the VOC from automatic washing and 5% from manual washing are cleaned and can be deducted unless the printing company can demonstrate different figures.

Moreover the printing company can assume that 0.75% of VOC will be held back in cloths and rugs and removed under controlled conditions if the cloths and rugs are sent for laundering or incineration and if the printing company stores them in closed containers unless the printing company can demonstrate different figures. This quantity too can accordingly be deducted.

Digital printing machines and recycling

For digital printing machines with wet toner, can weight information be used on the basis of e.g. invoices for sold VOC. The quantity documented by means of e.g. invoices, may be deducted and this applies to all product chemicals excluding wet toner. For wet toner, two values (VOC) are used in calculation in My Swan Account. The lower value (15%) is applied to digital printing machines having condensation followed by recycling. The higher value (30%) is applied when the equivalent recycling technique is missing.

Gravure printing companies

Gravure printing companies which have facilities for recycling solvents and resell the recycled solvents may deduct the quantity sold.

Moreover, 0.3% of all purchased/received VOC/toluene "captured" in cloths and rags and 0.3% of purchased/received VOC/toluene in printing ink waste may be subtracted assuming that cloths and rags and printing ink waste are stored in closed containers at the printing company and are removed/handled under controlled conditions.

Measurements of VOC at heatset printing companies

Measurements of VOC quantities at local emission points must be based on:

- measurements of NMVOC (Non Methane Volatile Organic Compounds) in mg C/Nm³ flue-gas after each treatment unit - as required by the authorities for heatset printing companies of a certain size
- information on annual gas flow with the gas flow during operations (in Nm³/h) and the annual number of hours of operations for each treatment unit

If measurements of NMVOC are not performed, the European threshold value of 20 mg C/Nm³ may be used as a standard value. To simplify conversion to VOC the printing company must assume that it is a so called Magie oil, which consists of hydro-carbons with a typical chain length of C₉-C₂₀. This means that 1 g of VOC will on average correspond to 0.85 g of C.

Energy content of fuels and district heating

Table 7 below shows the values for the energy content that must be applied when calculating energy consumption on the basis of purchased/received fuels and district heating.

In the case of fuels not included in the table, data provided by the supplier may be used (lower calorific value).

Table 7. Energy factors based on lower calorific value

Fuel	Energy content	Unit
Light heating oil	36.0	GJ/m ³
Heavy heating oil	38.7	GJ/m ³
LPG (gasol)	46.1	MJ/kg
Natural gas	38.9	MJ/m ³
Biogas	6.4	kWh/m ³
Pellets	10.0	GJ/m ³
Woodchips	3.5	GJ/m ³
Briquettes	10.0	GJ/m ³
Coal	26.5	MJ/kg
District heating		
Water based, 35°C cooling	40.8	kWh/m ³
Steam based, condensate at 100°C and normal air pressure	627	kWh/m ³

If more specific values are available from the supplier of fuel, e.g. own measured values, these values may be applied instead.

The following values may be used as standard values for density if the supplier has not provided the data:

Natural gas:	0.85 kg/m ³ N
Light heating oil:	0.89 kg/liter
Heavy heating oil:	0.98 kg/liter
District heating water:	1.0 kg/liter