Nordic Ecolabelling for

De-icers

Version 3.0 • 29 March 2023 – 28 May 2023
Consultation

Nordic Ecolabelling

Content

063 De-icers, version 3.0, 07 March 2023

Addresses

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

Denmark
Ecolabelling Denmark
Fonden Dansk Standard
Göteborg Plads 1, DK-2150 Nordhavn
Fischersgade 56, DK-9670 Løgstør
Tel: +45 72 300 450
info@ecolabel.dk
www.svanemaerket.dk

Iceland
Ecolabelling Iceland
Norræn Umhverfismerking
á Íslandi
Suðurlandsbraut 24
IS-108 Reykjavik
Tel: +354 591 20 00
svanurinn@ust.is
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Finland
Ecolabelling Finland
Urho Kekkosen katu 4-6 E
FI-00100 Helsingfors
Tel: +358 9 61 22 50 00
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Norway
Ecolabelling Norway
Henrik Ibsens gate 20
NO-0255 Oslo
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Sweden
Ecolabelling Sweden
Box 38114
SE-100 64 Stockholm
Tel: +46 8 55 55 24 00
info@svanen.se
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What is a Nordic Swan Ecolabelled de-icer?

Nordic Swan Ecolabelled de-icers meet ambitious environmental requirements from a holistic life cycle perspective. This means that Nordic Swan Ecolabelled de-icers are amongst the environmentally best in their category.

Nordic Swan Ecolabelled de-icers:

- Meet ambitious requirements regarding environmentally hazardous chemicals, including requirements on ecotoxicity and biodegradability.
- Are not made of salt which is a better choice for trees and plants.
- Have low discharge of pollutants into the wastewater system, for example heavy metals.
- Meet ambitious requirements on avoiding corrosion on buildings, aircrafts, and vehicles.
- Are effective concerning ice melting capacity.

Why choose the Nordic Swan Ecolabel?

- The licensee may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.

- The Nordic Swan Ecolabel is a simple way of communicating environmental focus and commitment to customers.

- The Nordic Swan Ecolabel clarifies the most important environmental impacts and thus shows how a company can cut emissions, resource consumption and waste management.

- Environmentally suitable operations prepare the licensee for future environmental legislation.

- Nordic Ecolabelling provides businesses with guidance on the work of environmental improvements.

- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

What can carry the Nordic Swan Ecolabel?

A Nordic Swan Ecolabel may be awarded for de-icers used for the purpose of removing ice and snow on flat areas, preventing further ice formation, or maintaining friction on for example runways at airports, roads, bridges, and cycle paths.

The de-icers may be either liquid or solid (granulate). Sand and grit cannot be Nordic Swan Ecolabelled.

How to apply

Application and costs

For information about the application process and fees for this product group, please refer to the respective national web site. For addresses see page 3.

What is required?

The application consists of an application form and documentation showing that the requirements are fulfilled.

In this criteria document, each requirement is marked with the letter O (obligatory requirement) and a number. All requirements must be fulfilled to be awarded a licence.

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

✉ Enclose

🔑 Requirement checked onsite

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

Licence validity

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

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

On-site inspection

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

Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 3 for addresses. Further information and assistance (such as calculation sheets or electronic application help) is available. Visit the relevant national website for further information.

1 Environmental requirements

The requirements in the criteria document and accompanying appendices apply to all ingoing substances in the Nordic Swan Ecolabelled de-icer. Impurities are not regarded as ingoing substances and are exempt from the requirements.

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

- Ingoing substances: all substances in the Nordic Swan Ecolabelled product, including additives (e.g., preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g., formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances.

- Impurities: residuals, pollutants, contaminants etc. from production, incl. production of raw materials that remain in the Nordic Swan Ecolabelled product in concentrations less than 100 ppm (0,0100 w-%, 100 mg/kg).

- Impurities in the raw materials exceeding concentrations of 1,0% are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled product.

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

O1 Description of the product

The applicant must provide the following information about the de-icer.

- Description of the physical form of the product (e.g., whether the product is liquid or solid).
- Description of the product's area of use.
- The product’s volume or weight.
- All trade names if the product is sold in multiple countries.

✉ Description of the product in line with Appendix 1.

✉ Copy of label and/or product sheet can be sent in as part of the documentation.

O2 Formulation

The applicant must provide a complete recipe for the de-icer. The recipe must contain the information below for each ingoing raw material. If a raw material contains two or more substances, each substance must be declared.

- Trade name
- Chemical name of all ingoing substances and impurities
- Amount (both with and without solvents, e.g., water)
- CAS no. / EC no.
- Function

✉ The complete recipe of the de-icer as set out in the requirement.

✉ Safety data sheet for each raw material in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC).

O3 Classification of the product

The de-icer must not be classified in accordance with hazard classes described in the table below.

Table 1 Classification of the product

Classification of chemical products CLP Regulation 1272/2008:		
Hazard statement	**Hazard class and category**	**Hazard code**
Hazardous to the aquatic environment	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2 Aquatic Chronic 3 Aquatic Chronic 4	H400 H410 H411 H412 H413
Hazardous to the ozone layer	Ozone	H420
Carcinogenicity*	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact	H360 H361 H362
Acute toxicity	Acute Tox 1 or 2 Acute Tox 1 or 2 Acute Tox 1 or 2 Acute Tox 3 Acute Tox 3 Acute Tox 3 Acute Tox 4 Acute Tox 4 Acute Tox 4	H300 H310 H330 H301 H311 H331 H302 H312 H332
Specific target organ toxicity, single or repeated exposure	STOT SE 1 STOT SE 2 STOT RE 1 STOT RE 2	H370 H371 H372 H373
Skin corrosion/irritation	Skin Corr. 1A, 1B or 1C Skin Irrit. 2	H314 H315
Aspiration hazard	Asp. Tox. 1	H304
Respiratory or skin sensitisation	Resp. Sens. 1, 1A or 1B Skin Sens. 1, 1A or 1B	H334 H317
Serious eye damage or eye irritation	Eye Dam. 1 Skin Irrit. 2	H318 H319

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

Please note that the producer/supplier is responsible for the classification.

☒ Product label or safety data sheet for the product in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC).

☒ Completed and signed declaration from the manufacturer of the product (Appendix 2).

O4 Classification of ingoing substances

Ingoing substances in the de-icer must not be classified in accordance with hazard classes described in the table below.

Table 2 Classification of ingoing substances

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

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

* Complexing agents of the MGDA and GLDA type may contain NTA impurities in the raw material in concentrations of less than 0.2% if the concentration of NTA in the product is below 0.1%.

✉ Safety data sheet for each raw material in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC).

✉ Completed and signed declaration from the manufacturer of the product (Appendix 2).

✉ Completed and signed declaration from the raw material supplier (Appendix 3).

O5 Biodegradability

The de-icer must be readily biodegradable according to test method No 301 A–F or No 310 in OECD guidelines for testing of chemicals or other equivalent test methods evaluated by an independent body and controlled by Nordic Ecolabelling.

✉ Test report and results according to the requirement.

O6 Oxygen demand

The oxygen consumption during degradation at the recommended dosage of the de-icer at preventive usage at -5 °C must not exceed 5 g O_2 / m^2.

Either the COD value for the de-icer in use form must be measured and stated in accordance with ISO 6060 (or equivalent testing methods evaluated by an independent body and controlled by Nordic Ecolabelling) or the ThOD value for the de-icer in use form must be calculated.

The calculation of ThOD can be made from the elemental composition of each substance, in accordance with the following methods as described in OECD 301 for the compound structure $C_cH_hCl_{cl}N_nNa_{Na}O_oP_pS_s$.

Without nitrification:

$$ThOD_{NH_3} = \frac{16[16[2c + 1/2(h - cl - 3n) + 3s + 2{,}5p + 1/2na - o]}{MW}\ g\ O_2/\ g\ substance$$

With nitrification:

$$ThOD_{NO_3} = \frac{16[2c + 1/2(h - cl) + 2{,}5n + 3s + 2{,}5p + 1/2na - o]}{MW}\ g\ O_2/\ g\ substance$$

where:

MW = the molecular weight of the substance

To calculate the ThOD of a mixture, use the weight fractions of the substances in the de-icer product according to the following method.

$$ThOD_{product} = \Sigma\ (MW_i \times F_i \times ThOD_i)\ /\ \Sigma\ MW_i$$

where:

MW_i = the molecular weight of the ith substance in the mixture

F_i = the weight fraction of the ith substance in the mixture

$ThOD_i$ = the number of moles of oxygen required to oxidize one mole of the ith substance

✉ Test report and results or a calculation according to the requirement.

O7 Ecotoxicity

The de-icer may not contain any raw material that display an aquatic ecotoxicity for algae, daphnia, fish, and bacteria in the product of EC50 ≤ 100 mg/l.

✉ Safety data sheet for each raw material in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC) and reference to DID number* or test report for the raw material covering each of the groups of organisms below:

- Daphnia test in accordance with OECD 202 Part l, EG C.2 or DIN EN ISO 6341.
- Fish test in accordance with OECD 203, EG C.1 or a fish embryo test in accordance with DIN EN ISO 15088 or OECD 236.
- Algae test in accordance with OECD 201, EG C.3 or ISO 8692.
- Bacteria test (pseudomonas cell multiplication inhibition test) in accordance with DIN EN ISO 10712 or a luminescent bacteria test in accordance with DIN EN ISO 11348-1 or DIN EN ISO 11348-2.

** The DID number is an ingredient's number on the DID list, version 2016 or later, which is used when calculating chemical requirements. The DID list can be obtained from Nordic Ecolabelling's websites, see addresses on page 3.*

Compliance with the aquatic toxicity requirements can also be verified by testing the product. If there is no fish test available for the product, performing a new test as verification for the Nordic Swan Ecolabel is not permitted because this involves testing vertebrate animals (exception OECD 236 or Part C49 of the Annex for Regulation (EG) No 440/2008).

O8 Limitations on nitrogen, phosphorus, and chlorine

The following limit values may not be exceeded in the de-icer.

- Nitrogen content: 800 mg / kg product
- Phosphorous content: 800 mg / kg product
- Content of total chlorine: 100 mg / kg product

✉ For nitrogen content: Safety data sheet for each raw material in line with prevailing European legislation (Annex II to REACH Regulation, 1907/2006/EC) and test report for the total bound nitrogen in accordance with DIN EN 16169 with addition for analysis technique using Kjeldahl (total nitrogen).

✉ For phosphorous content: Test report in accordance with DIN EN ISO 6878 or DIN 38405-11.

✉ For chlorine content: Test report in accordance with DIN EN ISO 10304-1 or DIN 38405-1.

O9 Heavy metals

The limit values in the table below may not be exceeded in the de-icer.

Table 3 Limit values for heavy metals

Heavy metal	Limit value (mg / kg DS*)
Arsenic	7,5
Cadmium	0,1
Chromium	10
Copper	10
Lead	20
Mercury	0,8
Nickel	10
Zinc	10

**DS = Dry substance*

When testing for the content of heavy metals, ICP- or AAS methods must be used. For each metal a method using a detection limit of at least ten times lower than the level of the requirement must be applied.

✉ Test report and results conducted by a third part test institution. The test report must contain the results of testing for the total content of heavy metals, information on the method of analysis and the sensitivity of the method.

O10 Prohibited substances

The following substances are excluded from use in the de-icer:

- Bisphenols and bisphenol derivatives[1]
- DTPA (diethylenetriamine pentaacetate), CAS-no. 67-43-6
- EDTA (ethylenediaminetetraacetic acid), CAS-no. 13235-36-4, and its salts
- MI (methylisothiazolinone), CAS no. 2682-20-4
- Microplastics

  Microplastics are defined here as particles of insoluble macromolecular plastic less than 5 mm in size, achieved through one of the following processes:

  a) Polymerization, such as polyaddition or polycondensation, or a similar process that uses monomers or other precursors.

  b) Chemical change of natural or synthetic macromolecules.

  c) Microbial fermentation.

  Note that Nordic Ecolabelling follows the development of ECHA's restriction proposal and its definition, and we reserve the right to change the definition above once the definition in the restriction proposal has been fixed. An appropriate transition period will be granted.

- Nanomaterials/-particles

[1] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02

Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01):

'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:

(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;

(b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;

(c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.

- NTA (nitrilotriacetic acid), CAS-no. 139-13-9 and its salts

  Exemption: Complexing agents of the MGDA and GLDA type may contain NTA impurities in the raw material in concentrations of less than 0.2% if the concentration of NTA in the product is below 0.1%.

- PFAS (per- and polyfluoroalkyl substances)
- Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III.
  - o https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu
  - o https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption
  - o https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities

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

- Substances categorized as Substances of Very High Concern (SVHC) and included on the Candidate List: https://echa.europa.eu/candidate-list-table.
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative), in accordance with the criteria in Annex XIII of REACH, plus substances that have not yet been investigated but that meet these criteria.
- Triazoles

✉ Appendix 2 for the product and Appendix 3 for all raw materials or equivalent certification duly completed and signed.

O11 Corrosion

The de-icer must not cause corrosion damage more than the following values. Test method ASTM F 483 is to be used.

- On aluminium (AMS 4041 or equivalent test): 0.3 mg / cm² for 24 hours.
- On carbon steel (AMS 5045 or equivalent test): 0.8 mg / cm² for 24 hours.

✉ Test report and results according to the requirement.

2 Efficiency

O12 Efficiency

The applicant must be able to prove that the de-icer has a satisfactory efficiency in relation to the purpose of the use.

For de-icers with the purpose of provide anti-freezing protection (preventative), the ice melting capacity must be tested according to SAE AIR6170A 2017-02.

For de-icers with the purpose of de-ice (reactive), the ice undercutting area must be tested according to SAE AIR6172A 2017-03 and the ice penetration depth according to SAE AIR6211A 2017-05.

The tests must be performed al -5°C and 30 min of exposure using the recommended dosage stated in requirement 013.

Solid products

- The ice melting capacity for solid product directly used must be more than 1.7 g / g product.
- The ice melting capacity (25 % solution of the solid product) must be more than 1.4 g / g product.
- The ice undercutting area (25 % solution of the solid product) must be more than 90 mm².
- The ice penetration depth (25 % solution of the solid product) must be more than 4.0 mm.

Liquid products

- The ice melting capacity must be more than 2.2 g / g product.
- The ice undercutting area must be more than 110 mm².
- The ice penetration depth must be more than 5.5 mm.

✉ Test report and results conducted by a third part test institution. If more than one test is conducted, all tests must be done by the same test institute.

3 User information and packaging

O13 User information

The product's label or accompanying product sheet must include information about what dosage that is recommended to provide the most satisfactory result under various weather conditions (including variations in temperature and precipitations) and surrounding environment (parks, forests, harbours, airports, bridges, car parks etc.).

Note that the product must fulfil the efficiency test in requirement O12 at the recommended dosage.

For solid de-icers (granulate) the product's label or accompanying product sheet must also include an instruction on the use of security equipment (e.g. gloves and protection glasses).

✉ Copy of label and/or product sheet.

O14 Rigid plastic packaging: Recycled material and design for recycling

This requirement applies to primary packaging that is ≤ 5 litres or kg.

1. Recycled material

The primary packaging must contain a minimum of 50% (by weight, calculated on the total mass of the container, closure and label) post-consumer/commercial recycled material (PCR)*.

2. Design for recycling

The primary packaging must have a design that enables material recovery. This means that:

- The individual components of the container must be made from monomaterial of either polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET).
- It is not allowed to add pigments to PET.
- Carbon black pigments must not be added to container or closure.
- Fillers (such as $CaCO_3$) must not be included in PE or PP containers or closures at a level that the density of the plastic exceeds 0.995g / cm^3.
- Barriers are not allowed in plastic packaging.
- Metal must not be part of the container or closure.
- Silicone is not allowed in closures.

  ** Post-consumer/commercial recycled material is defined in the requirement according to ISO 14021:2016: "Post-consumer/commercial" is defined as material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.*

  Note: Nordic Ecolabelling recommends the applicants not to use PCR qualities that are intended for food.

  Container means bottle, box, can etc.

  Closure means cap, lid, pump, spout, oblate, seal, membrane etc.

  Label means "traditional label", shrink film label/sleeve, direct print etc. (see O15 for details on label requirements).

✉ Packaging specifications (including all components as container and closure, label etc.) or certificate showing the materials used, component weights, density of PE or PP components, whether components contain PCR material and which pigments have been added. Appendix 5 can be used as part of the documentation.

O15 Labels for rigid plastic packaging: Design for recycling

This requirement applies to primary packaging that is ≤ 5 litres or kg.

Labels must have a design that enables material recovery. This means that:

- Containers in polyethene (PE) and polypropene (PP): The following label materials are permitted:
  - Polyolefin plastic labels (PE and PP) as well as PET or PET-G labels with density > 1.0 g / cm^3. For labels of different material than the packaging, the suitability must be substantiated in accordance with

RecyClass' Washing quick test procedure. For film labels applied on HDPE & PP containers, version 1.0[2].

- Paper labels without fibre loss. The suitability must be substantiated in accordance with ReCyclass' Washing quick test procedure: For paper labels applied on HDPE & PP containers, standard laboratory practice, version 1.0[3].

- Containers in polyethylene terephthalate (PET) must have a label of a different plastic material, with a density < 1.0 g / cm^3, or a paper label without fibre loss.
  - Paper labels without fibre loss: The suitability must be substantiated in accordance with ReCyclass' Washing quick test procedure: For paper labels applied on HDPE & PP containers, standard laboratory practice, version 1.0,[4].

  Note: PET-G is not allowed in labels on PET containers. For the time being, cPET labels are also not permitted. Nordic Ecolabelling will consider allowing cPET-labels with the appropriate specifications, if cPET labels become endorsed by EPBP (The European PET Bottle Platform) for PET bottles and/or by ReCyclass (www.recyclass.eu).

- Polyvinyl chloride (PVC) and other halogenated plastics must not be used in labels.
- Metallized labels/shrink film labels are not permitted.

  Exception: Metal foil in RFID labels.

- For labels of different material than the packaging: Labels must not cover more than 60% of the container. The calculation of the percentage shall be based on the two-dimensional profile of the container i.e., the area of the top and bottom of the packaging and the sides of a box/container/bottle/can shall not be included in the calculation. If the label on the front of pack and back of pack are of different size, the maximum percentage of 60% shall be fulfilled for each side separately. For a cylindrical bottle, the calculation can also be based on the three-dimensional profile exclusive bottom and top of the bottle.
- Direct print on the container is not permitted except for date codes, batch codes and UFI (Unique Formula Identifier).

  Label means "traditional label", shrink film label/sleeve, direct print etc.

✉ Label specifications showing the material used and density. Appendix 5 can be used as part of the documentation.

✉ If plastic labels of different material than the container is used on PE or PP containers. Test report from a laboratory fulfilling the conditions in Appendix 4, showing that the label is approved.

✉ If paper labels are used: Test report from a laboratory fulfilling the conditions in Appendix 4, showing that the label is approved.

✉ Declarations that PVC and other halogenated plastics, aluminium and other metals have not been used. Appendix 5 can be used.

[2] https://recyclass.eu/wp-content/uploads/2022/04/RecyClass-Washing-QT-Procedure-for-Film-Labels-applied-on-HDPE-and-PP-Containers-v1.1.pdf (Accessed on 2021-06-23).
[3] https://recyclass.eu/wp-content/uploads/2022/04/RecyClass-Washing-QT-Procedure-for-Film-Labels-applied-on-HDPE-and-PP-Containers-v1.1.pdf (Accessed on 2021-06-11).
[4] https://recyclass.eu/wp-content/uploads/2022/04/RecyClass-Washing-QT-Procedure-for-Film-Labels-applied-on-HDPE-and-PP-Containers-v1.1.pdf (Accessed on 2021-06-11).

✉ For labels of different material than the packaging: Calculation of label size compared to the surface of the container.

✉ Declaration from the applicant that direct print is not used except for date codes, batch codes and UFI. Appendix 2 can be used.

4 Licence maintenance

The purpose of the licence maintenance is to ensure that fundamental quality assurance is dealt with appropriately.

O16 Customer complaints

The licensee must guarantee that the quality of the Nordic Swan Ecolabelled product does not deteriorate during the validity period of the licence. Therefore, the licensee must keep an archive over customer complaints.

Note that the original routine must be in one Nordic language or in English.

✉ The company's routine for handling and archiving customer complaints.

O17 Traceability

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

You can upload your company's routine or a description of the actions to ensure traceability in your company.

✉ A routine or a description.

Regulations for the Nordic Ecolabelling of products

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

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

Follow-up inspections

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

The licence may be revoked if it is evident that the product does not meet the requirements.

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

Appendix 1 Description of the product

The declaration relates to the following de-icer:

De-icer
Manufacturer
Supplier / importer

Describe the physical form of the product (e.g., whether the product is liquid or solid):

_____

_____

Describe the product's area of use:

_____

_____

State the product's volume or weight:

_____

_____

State all trade names if the product is sold in multiple countries:

_____

_____

_____

Place and date	Company name / stamp
Person responsible	Signature of responsible individual
Phone	E-mail

Appendix 2 Declaration from the manufacturer of the product

To be used in conjunction with an application for a licence for the Nordic Swan Ecolabelling of de-icers. To complete the following declaration, you will need declarations for all raw materials (Appendix 3 or equivalent declaration).

This declaration is based on the knowledge we have at the time of the application, based on tests and / or declarations from raw material manufacturers, with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Product name: _____

The requirements in the criteria document and accompanying appendices apply to all ingoing substances in the Nordic Swan Ecolabelled de-icer. Impurities are not regarded as ingoing substances and are exempt from the requirements.

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

Ingoing substances: all substances in the Nordic Swan Ecolabelled product, including additives (e.g., preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g., formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances.

Impurities: residuals, pollutants, contaminants etc. from production, incl. production of raw materials that remain in the Nordic Swan Ecolabelled product in concentrations less than 100 ppm (0,0100 w-%, 100 mg/kg).

Impurities in the raw materials exceeding concentrations of 1,0% are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled product.

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

O3 Classification of the product		
Is the product classified with any of the hazard phrases below? *Including all combinations of stated exposure routes and stated specific effect. For example, H350 also covers classification H350i.*	*Yes*	*No*
H400 – Toxic to aquatic life, hazard category 1	☐	☐
H410 – Toxic to aquatic life	☐	☐
H411 – Toxic to aquatic life	☐	☐
H412 – Toxic to aquatic life	☐	☐
H413 – Toxic to aquatic life	☐	☐
H420 – Hazardous to the ozone layer	☐	☐
H350 – May cause cancer, hazard category 1A and 1B	☐	☐
H351 – Suspected of causing cancer, hazard category 2	☐	☐
H340 – May cause genetic defects, hazard category 1A and 1B	☐	☐
H341 – May cause genetic defects, hazard category 2	☐	☐
H360 – Toxic for reproduction, hazard category 1A and 1B	☐	☐
H361 – Toxic for reproduction, hazard category 2	☐	☐
H362 – Toxic for reproduction, effects on or through breastfeeding (supplementary category)	☐	☐
H300 – Acute toxicity	☐	☐
H310 – Acute toxicity	☐	☐
H330 – Acute toxicity	☐	☐
H301 – Acute toxicity	☐	☐
H311 – Acute toxicity	☐	☐
H331 – Acute toxicity	☐	☐
H302 – Acute toxicity	☐	☐
H312 – Acute toxicity	☐	☐
H332 – Acute toxicity	☐	☐
H370 – Specific target organ toxicity: single exposure and repeated exposure	☐	☐
H371 – Specific target organ toxicity: single exposure and repeated exposure	☐	☐
H372 – Specific target organ toxicity: single exposure and repeated exposure	☐	☐
H373 – Specific target organ toxicity: single exposure and repeated exposure	☐	☐
H314 – Skin corrosion/irritation	☐	☐
H315 – Skin corrosion/irritation	☐	☐
H304 – Aspiration hazard	☐	☐
H334 – Respiratory or skin sensitising	☐	☐
H317 – Respiratory or skin sensitising	☐	☐
H318 – Serious eye damage or eye irritation	☐	☐
H319 – Serious eye damage or eye irritation	☐	☐

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

_____

_____

O4 Classification of ingoing substances		
Does the product contain substances classified with any of the hazard phrases below? Including all combinations of stated exposure routes and stated specific effect. For example, H350 also covers classification H350i.	*Yes*	*No*
H350 – May cause cancer, hazard category 1A and 1B	☐	☐
H351 – Suspected of causing cancer, hazard category 2	☐	☐
H340 – May cause genetic defects, hazard category 1A and 1B	☐	☐
H341 – May cause genetic defects, hazard category 2	☐	☐
H360 – Toxic for reproduction, hazard category 1A and 1B	☐	☐
H361 – Toxic for reproduction, hazard category 2	☐	☐
H362 – Toxic for reproduction, effects on or through breastfeeding (supplementary category)	☐	☐

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

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O10 Substances prohibited from products		
Does the product contain any of the following substances?	*Yes*	*No*
Bisphenols and bisphenol derivatives[5]	☐	☐
DTPA (diethylenetriamine pentaacetate), CAS-no. 67-43-6	☐	☐
EDTA (ethylenediaminetetraacetic acid), CAS-no. 13235-36-4, and its salts	☐	☐
MI (methylisothiazolinone), CAS no. 2682-20-4	☐	☐
Microplastics *Microplastics are defined here as particles of insoluble macromolecular plastic less than 5 mm in size, achieved through one of the following processes:* *a) Polymerization, such as polyaddition or polycondensation, or a similar process that uses monomers or other precursors.* *b) Chemical change of natural or synthetic macromolecules.* *c) Microbial fermentation.* *Note that Nordic Ecolabelling follows the development of ECHA's restriction proposal and its definition, and we reserve the right to change the definition above once the definition in the restriction proposal has been fixed. An appropriate transition period will be granted.*	☐	☐
Nanomaterials/-particles *Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01):* *'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:* *(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;* *(b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;* *(c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.*	☐	☐

[5] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02

NTA (nitrilotriacetic acid), CAS-no. 139-13-9 and its salts *Exemption: Complexing agents of the MGDA and GLDA type may contain NTA impurities in the raw material in concentrations of less than 0.2% if the concentration of NTA in the product is below 0.1%.*	☐	☐
PFAS (per- and polyfluoroalkyl substances)	☐	☐
Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III. o https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu o https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption o https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities *A substance which is transferred to one of the corresponding sublists called "Substances no longer on list", and no longer appears on any of List I-III, is no longer excluded. The exception is those substances on sublist II which were evaluated under a regulation or directive which doesn't have provisions for identifying EDs (e.g., the Cosmetics Regulation, etc.). For those substances, ED properties may still have been confirmed or suspected. Nordic Ecolabelling will evaluate the circumstances case-by-case, based on the background information indicated on sublist II.*	☐	☐
Substances categorized as Substances of Very High Concern (SVHC) and included on the Candidate List: https://echa.europa.eu/candidate-list-table.	☐	☐
Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative), in accordance with the criteria in Annex XIII of REACH, plus substances that have not yet been investigated but that meet these criteria.	☐	☐
Triazoles	☐	☐

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

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_____

O15 Labels for rigid plastic packaging: Design for recycling	**Yes**	**No**
Is there any direct print on the container except for date codes, batch codes and UFI (Unique Formula Identifier)?	☐	☐

In the event of any change to the composition of the product, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	Company name / stamp
Person responsible	Signature of responsible individual
Phone	E-mail

Appendix 3 Declaration from the manufacturer of the raw material to de-icers

To be used in conjunction with an application for a licence for the Nordic Swan Ecolabelling of de-icers.

This declaration is based on the knowledge we have at the time of the application, based on tests and / or declarations from raw material manufacturers, with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Name of raw material: _____

Function of raw material: _____

Please note that the information in this declaration is internally shared with certification personnel in Nordic Ecolabelling to be used in evaluation of applications of chemical technical products.

The requirements in the criteria document and accompanying appendices apply to all ingoing substances in the Nordic Swan Ecolabelled de-icers. Impurities are not regarded as ingoing substances and are exempt from the requirements.

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

Ingoing substances: all substances in the Nordic Swan Ecolabelled product, including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g. formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances.

Impurities: residuals, pollutants, contaminants etc. from production, incl. production of raw materials that remain in the Nordic Swan Ecolabelled product in concentrations less than 100 ppm (0,0100 w-%, 100 mg/kg).

Impurities in the raw materials exceeding concentrations of 1,0% are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled product.

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

Ingoing substances in the raw material/ingredient (chemical name, CAS-number, amount in weight-%):

_____

_____

Function of the raw material/ingredient(s), including all ingoing substances:

_____

O4 Classification of ingoing substances		
Does the raw material contain substances classified with any of the hazard phrases below? Including all combinations of stated exposure routes and stated specific effect. For example, H350 also covers classification H350i.	*Yes*	*No*
H350 – May cause cancer, hazard category 1A and 1B	☐	☐
H351 – Suspected of causing cancer, hazard category 2	☐	☐
H340 – May cause genetic defects, hazard category 1A and 1B	☐	☐
H341 – May cause genetic defects, hazard category 2	☐	☐
H360 – Toxic for reproduction, hazard category 1A and 1B	☐	☐
H361 – Toxic for reproduction, hazard category 2	☐	☐
H362 – Toxic for reproduction, effects on or through breastfeeding (supplementary category)	☐	☐

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

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O10 Substances prohibited from products		
Does the raw material contain any of the following substances?	*Yes*	*No*
Bisphenols and bisphenol derivatives[6]	☐	☐
DTPA (diethylenetriamine pentaacetate), CAS-no. 67-43-6	☐	☐
EDTA (ethylenediaminetetraacetic acid), CAS-no. 13235-36-4, and its salts	☐	☐
MI (methylisothiazolinone), CAS no. 2682-20-4	☐	☐
Microplastics *Microplastics are defined here as particles of insoluble macromolecular plastic less than 5 mm in size, achieved through one of the following processes:* *a) Polymerization, such as polyaddition or polycondensation, or a similar process that uses monomers or other precursors.* *b) Chemical change of natural or synthetic macromolecules.* *c) Microbial fermentation.* *Note that Nordic Ecolabelling follows the development of ECHA's restriction proposal and its definition, and we reserve the right to change the definition above once the definition in the restriction proposal has been fixed. An appropriate transition period will be granted.*	☐	☐
Nanomaterials/-particles *Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01):* *'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:* *(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;* *(b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;* *(c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.*	☐	☐
NTA (nitrilotriacetic acid), CAS-no. 139-13-9 and its salts *Exemption: Complexing agents of the MGDA and GLDA type may contain NTA impurities in the raw material in concentrations of less than 0.2% if the concentration of NTA in the product is below 0.1%.*	☐	☐
PFAS (per- and polyfluoroalkyl substances)	☐	☐
Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III. o https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu o https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption o https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities *A substance which is transferred to one of the corresponding sublists called "Substances no longer on list", and no longer appears on any of List I-III, is no longer excluded. The exception is those substances on sublist II which were evaluated under a regulation or directive which doesn't have provisions for identifying EDs (e.g., the Cosmetics Regulation, etc.). For those substances, ED properties may still have been confirmed or suspected. Nordic Ecolabelling will evaluate the circumstances case-by-case, based on the background information indicated on sublist II.*	☐	☐
Substances categorized as Substances of Very High Concern (SVHC) and included on the Candidate List: https://echa.europa.eu/candidate-list-table.	☐	☐
Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative), in accordance with the criteria in Annex XIII of REACH, plus substances that have not yet been investigated but that meet these criteria.	☐	☐
Triazoles	☐	☐

[6] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02

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

_____

_____

In the event of any change to the composition of the product, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

Place and date	Company name / stamp
Person responsible	Signature of responsible individual
Phone	E-mail

Appendix 4 Test methods and analysis laboratories

1 Requirement for analysis laboratory

The following applies to tests regarding ecotoxic effects and performance tests.

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

2 Exotoxological test methods

International test methods (OECD Guidelines for Testing of Chemicals, ISBN 92-64-1222144) or equivalent methods must be used for documentation. If equivalent methods are used, these must be assessed by an independent body to ensure that the results are also equivalent. The relevant test methods that must be used are stated below.

3 Acute aquatic toxicity

For acute aquatic toxicity, test methods nos. 201, 202, 203 or 229 in the OECD Guideline for the Testing of Chemicals (ISBN 92-64-1222144) or DIN 38412-33 are to be used. Other scientifically accepted test methods may be used if the test results are assessed by an independent body and checked by Nordic Ecolabelling.

4 Chronic aquatic toxicity

For chronic aquatic toxicity, test method no. 211 (Daphnia magna) and 210, 215 or 229 (fish) in the OECD Guideline for the Testing of Chemicals is to be used. Other scientifically accepted test methods may be used if the test results are assessed by an independent body and checked by Nordic Ecolabelling.

OECD 201 (algae) may be used as a chronic test for algae, if chronic endpoints are chosen.

5 Bioaccumulation

If the bioaccumulative properties of a substance can be tested on fish in line with OECD test 305 A-E and its bioconcentration factor (BCF) is > 500, the substance is considered to be bioaccumulative. If the BCF value is not available, a substance is considered to be bioaccumulative if its logKow ≥ 4.0 according to 107, 117 or 123 in the OECD Guidelines for the Testing of Chemicals (ISBN 92-64-1222144) or equivalent, unless proven to be otherwise. If the highest measured BCF ≤ 500, the substance is not considered to be bioaccumulative even if its logKow ≥ 4.0.

The OECD's test 107 cannot be applied to surfactants which have both fat and water-soluble properties. Based on what is known today, for such substances it must be demonstrated with a high degree of certainty that they and their degradation products do not pose any risk to aquatic organisms over a longer time perspective.

Data models (such as BioWin) are accepted, but if the results of the model calculations are close to the limit values or Nordic Ecolabelling has contradictory data, more certain information may be required.

6 Aerobic degradability

For ready biological degradability, test method no. 301 (A-F) or no. 310 in OECD guidelines for testing of chemicals shall be used.

Other scientifically accepted test methods may be used if the test results are assessed by an independent body and checked by Nordic Ecolabelling.

Appendix 5 Declaration from the manufacturer of the primary packaging component

To be used in conjunction with an application for a licence for the Nordic Ecolabelling of de-icers.

This declaration is based on the knowledge we have at the time of the application, based on tests and/or declarations from raw material manufacturers, with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Producer/distributor
Part of the packaging (container, closure, label)
Packaging material (type of plastic, cardboard etc.) List all materials included in the packaging component and the percentage of each material.

O14 Rigid plastic packaging: Design for recycling	**Yes**	**No**
Is the component made of monomaterial? **If no, please state material:**	☐	☐
If made of polyethylene terephthalate (PET): Have any pigments/colours been added?	☐	☐
Has carbon black been added to the component?	☐	☐
Are any barriers used in the component?	☐	☐
Are fillers used in the components? **If yes**, please state the density of the packaging component [g/cm^3]:	☐	☐
Does the component contain metal parts? If yes, please specify the type of metal part:	☐	☐
For closures: Does the component contain silicone?	☐	☐

O15 Labels for rigid plastic packaging: Design for recycling	**Yes**	**No**
For non-polyolefin plastic labels applied to PE or PP containers: Please state the density of the label: *Note: Density in g/cm^3.*		
For labels applied to PET containers: Please state the density of the label: *Note: Density in g/cm^3.*		
Is there polyvinyl chloride (PVC) or other halogenated plastics present in the labels?	☐	☐
Does the label contain metal? If yes, please specify the type of metal part:	☐	☐

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