Nordic Ecolabelling for

White Goods

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Nordic Ecolabelling

Content

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

Addresses

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

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What is a Nordic Swan Ecolabelled white good?

The greatest environmental impact caused by a white good comes from its use. These Nordic Ecolabelling criteria focus therefore on requirements regarding the use of the machine. To be awarded a Nordic Swan Ecolabel licence, a machine must meet environmental requirements without compromising on performance. Energy requirements are based on the EU's energy labelling regulations.

A Nordic Swan Ecolabelled white good fulfils requirements in a number of areas, such as:

- Electricity and water consumption
- The product's functional washing, rinsing, spinning and drying performance and condensing efficiency.
- The reduced impact on the ozone layer through a ban on the use of ozone depleting refrigerants and foaming agents
- A reduced contribution to global warming through requirements to minimise use of substances that emit CO_2 (eq) to the atmosphere
- Reduced use of substances that are hazardous to health and the environment by applying requirements to certain materials and chemicals
- Material recycling
- Correct use of white goods, with full information and instructions for the customer.

Why choose the Nordic Swan Ecolabel?

- The producer of the white goods 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 cost-effective and simple way of communicating environmental work and commitment to customers and suppliers.
- More eco-aware production often creates scope for lowering costs, such as by cutting the consumption of energy and reducing amounts of packaging and waste.
- More eco-aware white goods prepare producers and consumers for future environmental requirements.
- Environmental issues are complex. It can take a long time to gain an understanding of a specific area. Nordic Ecolabelling can be seen as an aid in this work.
- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

What can carry the Nordic Swan Ecolabel?

The following white goods may carry the Nordic Swan Ecolabel:

- Refrigerators and freezers
- Washing machines
- Dishwashers
- Tumble dryers
- Commercial beverage coolers[1]

Gas-powered appliances, washer/dryers, drying cupboards, coffee machines, extractor fans, ovens for household and commercial use, hobs/grills for household and commercial use, microwave ovens, food processors, kitchen appliances and battery-powered and absorption-type refrigerators and freezers cannot be given the Nordic Swan Ecolabel under these criteria.

The delimitation of the product group is the same as in the related Ecodesign Regulations and Energy Labelling Regulations as stated in Table 1. It will also be possible for hot water converter (HWC) machines to be given the Nordic Swan Ecolabel.

Table 1. Overview of current Ecodesign and Energy Labelling Regulations

	Ecodesign Regulation	Energy Labelling Regulation
Refrigerators and freezers	643/2009/EC	1060/2010/EC
Household washing machines	1015/2010/EC	1061/2010/EC
Household dishwashers	1016/2010/EC	1059/2010/EC
Household tumble dryers	932/2012/EC	392/2012/EC
Commercial beverage coolers	Under development within the EU	Under development within the EU

How to apply

A manufacturer or reseller can apply for a licence using the relevant application form. If a reseller applies for a licence, the manufacturer must also sign the application form.

All the requirements must be met. These requirements are marked with the letter O (obligatory requirement) and a running number.

Icons in the text

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

🔑 The requirement checked on site

[1] Commercial beverage cooler means a cabinet designed to refrigerate packaged non-perishable beverages, for sale at specified temperatures below the ambient temperature. The beverages are accessible directly through open sides or via one or more doors, and/or drawers. During periods of no demand the temperature inside the cooler may increase for energy saving purposes.

Application

Applications are made to the national ecolabelling organisation and the application is valid for 12 months. Applications may be processed by another ecolabelling organisation according to agreement between the organisations. The applicant is notified of this. Companies located outside the Nordic countries make applications to the national ecolabelling organisation of the primary market.

The application must consist of a completed application form together with all of the documentation required to demonstrate compliance with the requirements specified in the criteria document (this is specified for each requirement). The application form must specify in which Nordic countries the products in question are to be sold and the estimated turnover from the products in each country.

Further information and assistance may be available. Visit the relevant national website for information.

Sales in the Nordic region

Once granted, a licence is valid throughout the Nordic region. The licence document specifies in which Nordic countries the products are sold according to the information provided on the application. The products are published on Nordic Ecolabelling's website(s). The licensee undertakes to inform Nordic Ecolabelling of any changes as to where the product is sold. If the product is to be sold in other Nordic countries than those initially specified in the application, the licensee must provide written notification of this and submit any extra documentation required to Nordic Ecolabelling in the country that issued the license.

On-site inspection

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

Costs

An application fee is charged to companies applying for a licence. There is an additional annual fee based on the turnover of the Nordic Swan Ecolabelled white goods.

Enquiries

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 3 for addresses.

1 Manufacture

1.1 Product requirements

O1 Description of manufacturing process and materials

The manufacturing process for the white good is to be described.

The description must, as a minimum, contain the following details:

- A summary of all the parts in the white good, stating the type and materials.
- A description of the manufacturing process for the white good, stating the different stages of the process. The production technology and cleaning technology for surface treatment and metal plating of parts is to be stated.
- Name and location of:
  - factory/factories for final assembly of the white good.
  - subcontractors for the production of core components (such as compressor unit, drum, pipework, etc.).
  - subcontractors for surface treatment and metal plating.
- Copy of environmental licence/permit or control reports/documents from environmental authorities for final assembly.

Final assembly of white goods relates to assembly of core components (such as compressor unit, drum, pipework, etc.) into a finished white good. Final assembly does not refer to production of inputs such as metals, insulation materials or plastic parts.

✉ A material description of the white good's parts, a description of the white good's manufacturing process and subcontractors, plus a copy of the environmental licence/permit in line with the requirement.

O2 Chemical products, classification

The manufacturer must compile a list of the chemicals used in final assembly of white goods and in surface treatment. The safety data sheet for the chemical products is to be submitted.

Chemical products, such as cleaning products, paints, lacquers, adhesives and sealants, that are used in the final manufacture of white goods and for surface treatment of parts must not be classified in line with the risk phrases in Table 2 below.

An exemption to the requirement applies to metal plating of parts. When metal plating parts, the terms of requirement O4 must be met.

Table 2 Classification of chemical products

Classification	EU classification until 1 December 2010*	EU classification after 1 December 2010*
Toxic to the environment	N with R50, R50/53, R51/53 and/or R59	Toxic to aquatic organisms Category acute 1 H400, category chronic 1 H410, category chronic 2 H411. Ozone EUH 059
Very toxic	T x (T+ in Norway) with R26, R27, R28, R39	Acute Tox. 1/2 with H330, H310, H300, STOT SE 1 with H370
Toxic	T with R23, R24, R25, R39, R48	Acute Tox. 2/3 with H331, H330, H301 STOT SE 1 with H370 STOT RE 1 with H372
Allergenic	Xn with R42, Xi with R43	Resp sens 1 with H334 or Skin sens 1 with H317
Carcinogenic	Xn with R40 or T with R45, R49	Carc 1A/1B/2 with H350, H350i and/or H351
Mutagenic	T with R46 or Xn R68	Mut 1B/2 with H340 and/or H341
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63	Repr 1A/1B/2 with H360F, H360D, H361f, H361d, H360FD, H361fd, H360Fd, H360Df Lact with H362

** The classification applies under Directive 67/548/EEC and Directive 1999/45/EC (until 1 December 2010 and during transition period 2010-2015) or Regulation (EC) No 1272/2008 (from 1 December 2010). The requirement also covers combinations of the above risk phrases, e.g. T+ R26/27/28.*

Final assembly of white goods relates to assembly of core components (such as compressor unit, drum, pipework) into a finished white good. Final assembly does not refer to production of inputs such as metals, insulation materials or plastic parts.

✉ List of chemical products used in final assembly of white goods and surface treatment.

Safety data sheet/product data sheet in line with prevailing legislation in the country of application, e.g. Annex II to REACH (Regulation 1907/2006/EEC) for each product.

O3 Chemical substances

The following substances must not be actively added* to the chemical products named in O2 (for example, cleaning products, paints, lacquers, adhesives, sealants used in final assembly of white goods and surface treatment):

- lead (Pb), mercury (Hg), hexavalent chromium (Cr^{VI}), cadmium (Cd) and their compounds
- halogenated organic substances
- alkylphenols, alkylphenol ethoxylates or other substances that may form alkyphenols or alkylphenol ethoxylates
- phthalates
- volatile organic compounds at more than 1% by weight
- volatile organic compounds (VOCs**) at more than 5% by weight in surface treatment agents

** Ingoing substances are defined, if not otherwise mentioned, as all substances in the chemical product – including additives (e.g. preservatives or stabilisers) in the raw materials/ingredients, but not residuals from the production, incl. the production of raw materials. Residuals from production and from production of raw materials are defined as residuals, pollutants and contaminants derived from the production of the raw materials, which are present in the final product in amounts less than 100 ppm (0.0100 %w/w, 100 mg/kg), but not substances added to the raw materials or product intentionally and with a purpose – regardless of amount. Residuals in the raw materials above 1.0 % are regarded as ingoing substances. Known substances released from ingoing substances are also regarded as ingoing substances.*

***VOCs are defined as organic compounds that at 293.15 K have a steam pressure of 0.01 kPa or more.*

An exemption to the requirement applies to metal plating of parts. When plating metal parts, the terms of requirement O4 must be met.

Substances that are not actively added by the chemical manufacturer or its suppliers and that appear in quantities of less than 100 ppm are excluded 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.

✉ Declaration or other equivalent certification (documentation) from the chemical manufacturer/chemical supplier. Appendix 2 can be used.

O4 Metal plating of parts

Metals may not be plated with cadmium, chromium, nickel, zinc or alloys of these.

In exceptional cases, parts may be coated with trivalent chromium, nickel, zinc or alloys of these where this is necessary on the grounds of chemical or mechanical wear or on the grounds of another specific, documented, technical need.

The chrome plating must be based on trivalent chromium. Hexavalent chromium must not be used.

Any chrome, nickel and zinc plating processes must be carried out with the help of cleaning technology, membrane technology or similar technology in order to ensure the greatest possible recovery of the chemical products.

Emissions/residuals from the plating process are to be sent for recycling or waste treatment. The system must be closed and have no discharges, with exceptions for zinc where the discharge must be maximum: Zink: 0.5mg/l.

Test methods for zinc: EN ISO 11885. Test frequency: discharges to water shall be calculated as year mean value based on daily samples every week. Test on process water shall be after external treatment. The analyses shall be made on unfiltered samples. As an alternative a government fixed frequency for test sample can be approved.

✉ Declaration from the manufacturer/supplier saying that the metal plating requirement is fulfilled and a specification of which cleaning technology that may has been used. Appendix 3 can be used.

O5 Marking of plastic parts

Plastic parts that weight 50 grams or more must be marking in accordance with ISO 11469. (Cables and plastic parts with a smooth surface of less than 200 mm^2 are excluded from the requirement).

✉ Declaration from the white good manufacturer that the requirement is fulfilled.

O6 Flame retardants in plastic and rubber parts

a) Hexabromocyclododecane (HBCDD), Tris(2-chloroethyl) phosphate (TCEP) and high chlorine short chain and high chlorine medium chain chloroparaffins must not be added.

b) Tetrabromobisphenol A (TBBPA) must not be added.

c) Other halogenated organic flame retardants and other flame retardants that have been given the following risk phrases must not be added:

- H350 (may cause cancer)
- H350i (may cause cancer by inhalation)
- H340 (may cause inherited genetic harm)
- H360F (may damage fertility)
- H360D (may cause harm to the unborn child)

- H360Fd (may damage fertility. Suspect of damaging the unborn child)
- H360Df (may damage the unborn child. Suspect of damaging fertility)

An exemption from requirement b) may be given for printed circuit boards.

An exemption from requirement c) may be given for halogenated flame retardants:

- In cases where these are required for electrical or fire safety reasons under the Low Voltage Directive 73/23/EEC or standard EN 60335-1
- Printed circuit boards, PCBs
- Plastic and rubber parts weighing < 25 grams that are integral to electronic parts

The exemption does not apply to the flame retardants governed by a) that are prohibited under the RoHS Directive.

✉ Duly completed declaration from the manufacturer/supplier of the plastic and rubber parts, see Appendix 4.

O7 Phthalates

The following phthalates must not be added to plastic or rubber materials:

- Diethylhexyl phthalate (DEHP)
- Dibutyl phthalate (DBP/DnBP)
- Benzyl butyl phthalate (BBP)
- Dicyclohexyl phthalate (DCHP)
- Diisobutyl phthalate (DIBP)
- Diisononyl phthalate (DINP)
- Diisodecyl phthalate (DIDP)
- Di-n-octylphthalate (DNOP)
- Dihexyl phthalate (DHP)
- Diethyl phthalate (DEP)
- Diisoheptyl phthalate (DIHP)
- Bis(2-methoxyethyl) phthalate
- Diisopentyl phthalate
- N-pentyl-isopentyl phthalate

The following are exempted from the requirement:

- Printed circuit boards, PCBs
- Plastic and rubber parts weighing < 25 g that are integral to electronic parts
- Diisononyl phthalate (DINP) in glass doors for commercial beverage coolers.

✉ Duly completed declaration from the manufacturer/supplier of the plastic and rubber parts, see Appendix 4.

O8 Antibacterial properties

Chemicals or additives (including nano materials*) that are added to create an antibacterial or disinfectant surface, in or on the product or to be released during the use of the product, must not be used.

Silver ions, nano silver, nano gold and nano copper are antibacterial substances.

An antibacterial chemical inhibits or stops growth of microorganisms such as bacteria, fungi or protozoa (single-celled organisms).

** Definition of nanomaterial follows the EC commissions definition of nanomaterial from 18 October 2011, with exception of the limit for particle size distribution which is reduced to1 %: Nanomaterial means a natural,*

incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 1% or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm. This definition counts for the material, also particles outside the interval 1-100 nm as long as 1% of the material are particles of the size 1-100 nm. The definition is valid for particles in both bonded and not bonded form.

✉ Declaration from the producer/supplier that the requirement is fulfilled, see Appendix 5.

O9 Packaging

It must be possible to recycle or reuse the materials in the packaging and transport protection. The producer must submit a description of the packaging and transport protection and how it will be handled in the Nordic countries where the Nordic Swan Ecolabelled white good will be sold.

Chlorine based plastics and biocide treated/impregnated timber must not be used in the packaging.

✉ Description of packaging and how it will be handled, and description in the user instructions.

O10 Waste

The manufacturer must sort different types of waste that arise from the production of the white good, for example wood waste, glass waste, plastics and metals. A waste plan is to be included, listing waste fractions and a description of how the waste will be handled (e.g. recycling, landfill and incineration) and who will deal with the waste.

✉ Waste plan with waste fractions and waste management for the activity from the manufacturer of the white good.

2 Operation of the Nordic Swan Ecolabelled white good

O11 Energy efficiency

Refrigerators, freezers, washing machines and dishwashers must achieve energy efficiency class A+++ or better in accordance with the applicable Energy Labelling Regulation.

Tumble dryers must achieve energy efficiency class A+ or better in accordance with the applicable Energy Labelling Regulation.

Commercial beverage coolers must achieve energy efficiency requirements in accordance with information in Appendix 1, 1.7.

✉ Test report and calculation in line with EU Regulation that verifies energy efficiency index (EEI) and label for energy labelling. Requirement for test method and laboratories, see Appendix 1.

✉ Commercial beverage coolers: Test report including calculations showing that the requirement is fulfilled. Requirenment for test method, see Appendix 1, 1.7. Requirements for analyse laborties, see Appendix 1, 1.2.

O12 Noise

Refrigerators, freezers, dishwashers, washing machines, tumble dryers and commercial beverage coolers must meet the specific requirements for noise listed in Table 4, tested to standard EN 60704/ISO 3744:

Table 4 Max limit dB(A) of sound power for airborne noise

White good type	Max limit dB(A) Airborne noise
Fridge/freezer	40
Washing machine, wash programme, cotton 60˚C, to EN 60456	56 during wash programme 76 during spin
Dishwasher	44
Tumble dryer	65
Commercial beverage coolers	<=140 l* = 55 >140 l* <=500 l* = 63 > 500 l*= 65

** According to AHAM definitions for volume. The AHAM Program provides a uniform and commercially practical verification of refrigerator/freezer volume. https://www.aham.org/*

✉ Test report showing that the requirement is fulfilled. Requirement for test method and laboratories, see Appendix 1.

3 Specific product requirements

3.1 Refrigerators and freezers

O13 Ozone depletion- and global warming potential in foaming agents

Foaming agents for insulating foam must have an ozone depletion potential (ODP) equal to 0 and a global warming potential (GWP) < 15 (calculated in CO_2 equivalents over a period of 100 years).

The foaming agents must not contain halogenated organic compounds.

✉ List of foaming agents plus declaration from producer/supplier of foaming agents showing that the requirement is fulfilled. Use Appendix 6 and 7.

O14 Refrigerants in coolers and freezers

Refrigerants for the refrigeration process must have an ozone depletion potential (ODP) equal to 0 and a global warming potential (GWP) that is 5 or lower (calculated in CO_2 equivalents over a period of 100 years).

The refrigerants must not contain halogenated organic compounds.

Type of refrigerant that is used shall be marked on marking plate to ease future recycling.

✉ Copy of marking plate. List of refrigerants for the refrigeration process including their global warming potential, plus declaration from producer/supplier of refrigerants showing that the requirement is fulfilled. Use Appendix 6 and 7.

O15 Polycarbonate in direct contact with food

Polycarbonate must not be used in drawers intended for food storage (e.g. vegetable drawers).

✉ List of plastics used in storage drawers in refrigerators and freezers plus declaration that the requirement is fulfilled.

3.2 Washing machines

O16 Water consumption

The washing machine must meet the requirement for maximum permitted water consumption on the standard programme as outlined in Ecodesign Regulation (EU) No 1015/2010.

✉ Test report in line with EN 60456. Requirement for test method and laboratories, see Appendix 1.

O17 Spinning performance

Machines with a capacity of over 3.5 kg must achieve a remaining moisture content of less than 54% in a test measured according to Regulation (EU) No 1061/2010 and with the same standard 60ºC programme for cotton as when measuring energy efficiency.

Machines with a capacity of 3.5 kg or less must achieve remaining moisture content of less than 60% in a test measured according to the stated test method and with the same standard 60ºC programme for cotton as when measuring energy efficiency.

✉ Test report in line with EN 60456. Requirement for test method and laboratories, see Appendix 1.

O18 Washing performance

The machine must, on the standard programme, have a wash efficiency index ≥ 1.03 in line with Ecodesign Regulation (EU) No 1061/2010.

✉ Test report in line with EN 60456. Requirement for test method and laboratories, see Appendix 1.

O19 Rinsing performance, alkali method

The machine must pass a rinsing performance test using the alkali method with a index 1.5 or lower. The requirement can be fulfilled based on the standard programme, a separate programme or with the help of an option function for the standard programme. If the rinsing performance is fulfilled based on the standard programme, separate programme or with the help of an option function for the standard programme, the washing machine energy consumption should not exceed 0.19 kWh/kg. Energy efficiency is measured according to the specified test method.

✉ Test report in line with the instructions in standard EN 60456. If an extra rinse programme is used (rinse option in main programme), this is to be described. Requirement for test method and laboratories, see Appendix 1.

3.3 Dishwashers

O20 Water consumption

The dishwasher must use a maximum of 1.0 litres of water per place setting in accordance with standard EN 60436.

✉ Test report in line with the instructions in standard EN 60436. Requirement for test method and laboratories, see Appendix 1.

O21 Cleaning performance

The dishwasher must meet the requirements for cleaning performance stated in Regulation (EU) No 1016/2010.

✉ Test report in line with EN 60436. Requirement for test method and laboratories, see Appendix 1.

O22 Drying performance

The dishwasher must meet the requirements for drying performance stated in Regulation (EU) No 1016/2010.

✉ Test report in line with EN 60436 Requirement for test method and laboratories, see Appendix 1.

3.4 Tumble dryers

O23 Condensing efficiency

The tumble dryer must meet the requirements for drying performance class B stated in Regulation (EU) No 392/2012. The tumble dryer must be equipped with a moisture sensor for automatic termination of the drying programme.

✉ Test report in line with EN 61121. Requirement for test method and laboratories, see Appendix 1.

O24 Refrigerants in heat pump

If the tumble dryer contains a heat pump, the refrigerant must not have a global warming potential $GWP_{100} > 2000$.

If a refrigerant that is used has a $GWP_{100} > 100$ the construction of the heat pump shall be built to prevent leakage and pressure tested on the production site. The type of refrigerant shall be marked on marking plate according to EN 14511-4.

The refrigerant and its content shall be classified and marked according to EU directive 67/548/EC and 1999/45/EC alternative CLP (EU) 1272/2008.

✉ Copy of marking plate. Information for refrigerants with GWP_{100} –value, see Appendix 7.

4 Customer information

O25 Installation and user instructions for refrigerators and freezers

The appliance is to be sold with installation and user instructions that shall include directions on installation and correct use with regard to the environment and recommendations for optimal energy consumption. The cover or first page of the user instructions is to carry the following text or similar wording: "The user instructions contain more information on how to avoid consequences for the environment."

The installation instructions and user instructions must contain the following information:

1. How the packaging is to be dealt with in the Nordic countries where the white good is sold.
2. Instructions on how to install the appliance.
3. Instructions on the placement or installation of the appliance stating, for example, the minimum space around the appliance to guarantee sufficient air circulation.
4. Instructions that the consumer should avoid placing the appliance near a heat source (e.g. oven or radiator) or in direct sunlight. Recommendations that the consumer should, where relevant, consider insulating the appliance from heat sources in the walls or under the floor.
5. Information that the temperature in the room affects or limits the function or energy efficiency of the appliance.
6. Instructions that when the appliance has been moved, it is necessary to wait for around an hour before the appliance is reconnected to the mains power.

7. Instructions that the thermostat setting depends on the room temperature and that it should therefore be checked with the help of a suitable thermometer (with explanation of how to do this).
8. Instructions that hot food should be cooled down before being placed in the appliance, but that the cooling period should be as short as possible for health reasons.
9. Instructions that the evaporator should be kept free from thick layers of ice, and how and how often to defrost the appliance.
10. Instructions that the seal around the door should be replaced if it stops working properly.
11. Instructions that the condenser on the back of the appliance and the space below the appliance should be kept clear of dust and kitchen dirt.
12. Information that not following the above advice can lead to higher energy consumption.
13. Information that damage to the condenser (heat exchanger) on the back of the appliance, or anything else that might lead to refrigerants leaking out, should be avoided due to the risks to health and the environment. The user instructions must specifically state that sharp objects (such as knives, screwdrivers, etc.) should not be used to remove ice, since this could damage the evaporator.
14. Information that the appliance contains fluids and is made from parts and materials that can be reused and recycled.
15. Service and warranty information.
16. Information on the type of refrigerants and foaming agents.

✉ Installation and user instructions.

O26 Installation and user instructions for washing machines

The appliance is to be sold with installation and user instructions that shall include directions on installation, correct use with regard to the environment and recommendations for optimal consumption of energy, water and laundry detergent when the machine is used. The cover or first page of the user instructions is to carry the following text or similar wording: "The user instructions contain more information on how to avoid consequences for the environment."

The user instructions must contain the following:

1. How the packaging is to be dealt with in the Nordic countries where the white good is sold.
2. Instructions on how to install the appliance.
3. Information that Nordic Swan Ecolabelled laundry detergents are available.
4. Information that the detergent dosing should be adapted to the hardness of the water, the type of laundry to be washed, the amount of laundry and how dirty it is (a half load, for example, requires less detergent).
5. Instructions on the appropriate sorting of laundry according to material and fabric, and on setting the washing temperature according to the material. The instructions must also state that in most cases it is no longer necessary to wash at higher temperatures when using modern washing machines and Nordic Swan Ecolabelled laundry detergent.
6. Information on the washing machine's consumption of energy and water at different temperatures and with different load sizes, so that the consumer can

select the appropriate programme for minimum energy and water consumption.

7. Instructions that the washing machine should be turned off once the programme has finished to avoid any energy losses. The user instructions are to state how long the different programmes take.
8. The energy used on the following settings: switched off, timer set (programmed) and programme finished.
9. Instructions that the user should, if possible, avoid the pre-wash option on the machine.
10. Instructions that the extra rinse option must be activated/selected in the normal programme/standard programme to achieve the rinse performance required by Nordic Ecolabelling, if it is required.
11. Instructions on maintaining the washing machine, including regular cleaning of the filters and pumps and removal of deposits.
12. Information that not following the above advice can lead to higher consumption of energy, water and/or laundry detergent, which can lead to increased running costs and poorer washing performance.
13. Information that the consumer can make use of the manufacturer's take-back offer.

✉ Installation and user instructions.

O27 Installation and user instructions for dishwashers

The appliance is to be sold with installation and user instructions that shall include directions on installation, correct use with regard to the environment and recommendations for optimal consumption of energy, water and dishwasher detergent when the machine is used. The cover or first page of the user instructions is to carry the following text or similar wording: "The user instructions contain more information on how to avoid consequences for the environment."

The user instructions must contain the following:

1. How the packaging is to be dealt with in the Nordic countries where the white good is sold.
2. Instructions on how to install the appliance.
3. Information on the addition/dosing of rinse aid and salt.
4. Information that Nordic Swan Ecolabelled dishwasher detergents are available.
5. Information that the detergent dosing should be adapted to the hardness of the water in the machine, the type of items to be washed, the size of the load and how dirty it is (a half load, for example, requires less detergent).
6. Information on the dishwasher's consumption of energy and water at different temperatures and with different load sizes, so that the consumer can select the appropriate programme for minimum energy and water consumption. It is to be made clear that the Nordic Ecolabelling requirements are fulfilled by the recommended normal programme.
7. Information on how long the different programmes take.
8. Instructions on maintaining the dishwasher, including regular cleaning of the filters.
9. Information that not following the above advice can lead to higher consumption of energy, water and/or dishwasher detergent, which can lead to increased running costs and poorer cleaning performance.
10. Information that the consumer can make use of the manufacturer's take-back offer.

✉ Installation and user instructions.

O28 Installation and user instructions for tumble dryers

The appliance is to be sold with installation and user instructions that shall include directions on installation and correct use with regard to the environment and recommendations for optimal energy consumption. The cover or first page of the user instructions is to carry the following text or similar wording: "The user instructions contain more information on how to avoid consequences for the environment."

The user instructions must contain the following:

1. How the packaging is to be dealt with in the Nordic countries where the white good is sold.
2. Instructions on how to install the appliance.
3. Information that sun and wind are energy-efficient for drying clothes. Therefore, use an outdoor clothesline when the weather permits.
4. Information about the tumble dryer's energy consumption for different programmes.
5. Information about the fire risk when drying different types of fabric and product.
6. Instructions that the machine must not be overfilled. Overfilling the tumble dryer adds to the drying time.
7. Instructions about sorting clothing according to material since mixed materials can damage the moisture sensor.
8. Instructions on maintaining the tumble dryer, including regular cleaning of the lint filters and heat exchanger, and emptying collected water in a condenser dryer.
9. Information that collected condenser water must not be used as drinking water.
10. Information that the consumer can make use of the manufacturer's take-back offer.

✉ Installation and user instructions.

O29 Warranties

The manufacturer is to provide a warranty that the white good will work for at least two years. The warranty is to apply from the day that the machine is delivered to the customer.

✉ Declaration that the requirement is fulfilled.

O30 Replacement parts

The availability of replacement parts shall be guaranteed for 10 years from the time that production ceases.

✉ Declaration that the requirement is fulfilled.

5 Quality and regulatory requirements

If the manufacturer's quality management system is certified according to ISO 9001 and environmental management system is certified according to ISO 14 001 or EMAS, the following requirements are met.

O31 Laws and regulations (regulatory requirements)

The licensee shall ensure compliance with all applicable local laws and provisions at all production facilities for the Nordic Swan Ecolabelled white good. For example, local rules and provisions on health, safety and the working environment, environmental legislation (including REACH) and factory-specific permit terms/conditions are to be followed in the country in which the white good is manufactured.

✉ Valid certificate of ISO 9001 and ISO 14001 or EMAS for all production sites for Nordic Swan Ecolabelled products, or a declaration from the licensee, that the requirement is fulfilled, plus a report to the regulatory authority, see Appendix 8.

O32 Licence administrators

The company shall appoint an individual responsible for ensuring the fulfilment of Nordic Ecolabelling requirements, and a contact person for communications with Nordic Ecolabelling.

✉ Valid certificate of ISO 9001 and ISO 14001 or EMAS for all production sites for Nordic Swan Ecolabelled products, or an organisational chart showing who is responsible for the above.

O33 Documentation

The licensee must be able to present a copy of the application and factual and calculation data supporting the documents submitted with the application (including test reports, documents from suppliers and suchlike).

🔑 On-site inspection at licensee/manufacturer’s site.

O34 Quality of the white good

The licensee must guarantee that the quality of the Nordic Swan Ecolabelled white good is maintained throughout the validity period of the licence.

✉ Valid certificate of ISO 9001 and ISO 14001 or EMAS for all production sites for Nordic Swan Ecolabelled products, or procedures for collating and, where necessary, dealing with claims and complaints regarding the quality of the Nordic Swan Ecolabelled white goods.

O35 Planned changes

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

✉ Valid certificate of ISO 9001 and ISO 14001 or EMAS for all production sites for Nordic Swan Ecolabelled products, or procedures detailing how planned changes in products and markets are handled.

O36 Unplanned nonconformities

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

✉ Valid certificate of ISO 9001 and ISO 14001 or EMAS for all production sites for Nordic Swan Ecolabelled products, or procedures detailing how unplanned nonconformities are handled.

O37 Traceability

The licensee/manufacturer must have a traceability system for the production of the Nordic Swan Ecolabelled white good.

✉ Valid certificate of ISO 9001 and ISO 14001 or EMAS for all production sites for Nordic Swan Ecolabelled products, or a description of/procedures for fulfilment of the requirement.

O38 Take-back system

The Nordic Ecolabelling's Criteria Group decided on the 9 October 2017 to remove this requirement.

Regulations for the Nordic Ecolabelling of products

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

For commercial beverage coolers, in addition to the licence number, a descriptive subtext shall be included as follows: **Beverage cooler**

When the Nordic Swan Ecolabel is used on front of a commercial beverage cooler, it must be clearly communicated that is the cooler that is Nordic Swan Ecolabelled and not the beverages in the cooler.

Use of the Nordic Swan Ecolabel on front of a commercial beverage cooler must be approved by Nordic Ecolabelling.

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

Follow-up inspections

Nordic Ecolabelling may decide to check whether the white good 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 white good does not meet the requirements.

How long is a licence valid?

Nordic Ecolabelling adopted version 5.0 of the criteria for white goods on 20 June 2013. The criteria are valid until 30 June 2017.

On 8 December 2015 the Nordic Ecolabelling's Criteria Group decided about an adjustment of requirement O12 for fridge/freezer. Furthermore the documentation requirements for O31–O32 and O34–O38 were adjusted. The new version is 5.1.

Nordic Ecolabelling's Criteria Group decided on 7 February 2017 to prolong the criteria with 18 months until 31 December 2018, because the requirement levels for energy are acceptable. The new version is called 5.2.

The Nordic Ecolabelling Board decided on 14 June 2017 to include commercial beverage coolers in the criteria. The new version is called 5.3.

On the 9 October 2017 Nordic Ecolabelling's Criteria Group decided to remove O38 Take-back system. Furthermore the Nordic Ecolabelling's Criteria Group decided on 14 December 2017 to prolong the criteria with 24 months to the 31 December. The new version is called 5.4.

The 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.

New criteria

In future criteria it will be relevant to consider among other things:

- Sharper energy- and water consumption criteria.
- Requirements for automatic dosage of detergents shall be evaluated.
- Sharper requirements for additives in plastic and electronic components.
- Exemption of the Diisononyl phthalate (DINP) in glass doors for commercial beverage coolers shall be removed.

Appendix 1 Analyses and controls

1.1 Analysis and measurement methods

The EU has been thorough and far-reaching in drawing up and compiling analysis and measurement methods for determining the performance of the product group "white goods" as part of the development of its directives/regulations for ErP (ecodesign and labelling). Requirements state that the methods should be based on reliable, accurate and reproducible measurements that take account of recognised measurement methods at the latest technical level, including, where applicable, the harmonised standards that have been adopted by European standardisation bodies. These methods are established and used by the manufacturers in the industry. Nordic Ecolabelling has therefore also decided to use these methods for testing and analysis.

1.2 Requirement for testing institute / analysis laboratory

Requirement for analysis laboratory

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

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

- the authorities monitor the sampling and analysis process, or if
- the manufacturer has a quality management system encompassing sampling and analysis and has been certified to ISO 9001 or ISO 9002, or if
- the manufacturer can demonstrate agreement between a first-time test conducted at the manufacturer's own laboratory and testing carried out in parallel at an independent test institute, and that the manufacturer takes samples according to a set sampling plan.

1.3 Analysis methods / Test methods for refrigerators and freezers

Energy efficiency on the recommended normal programme, in line with Regulation (EU) No 1060/2010.

Energy efficiency on the recommended normal programme is to be tested according to EN 153.

Noise is to be tested according to EN 60704-2-14/ISO 3744.

1.4 Analysis methods / Test methods for washing machines

Energy efficiency, water consumption and spin performance on the recommended normal programme, in line with EN 60456.

Energy efficiency, water consumption, spin performance and washing performance with a full load on the standard programme, cotton 60°C and 40°C, are to be tested according to EN 60456:2010.

A full load is defined as the machine's declared capacity.

The rinse performance is to be tested using the alkali method according to EN 60456. Energy efficiency with full load on the standard programme, cotton 60°C and 40°C, are to be tested according to EN 60456:2010.

A full load is defined as the machine's declared capacity.

Noise is to be tested according to EN 60704-2-3 and EN 60704-3.

1.5 Analysis methods/Test methods for dishwashers

Energy efficiency, water consumption, drying performance and cleaning performance on the recommended normal programme, in line with Regulation (EU) No 1016/2010.

Energy efficiency, water consumption, drying performance and cleaning performance on the recommended normal programme are to be tested according to EN 60436.

Noise is to be tested according to EN 60704-2-3 and EN 60704-3.

1.6 Analysis methods/Test methods for tumble dryers

Energy efficiency and condensing efficiency on the recommended normal programme, in line with Regulation (EU) No 392/2012.

Energy efficiency and condensing efficiency on the recommended normal programme are to be tested according to EN 61121.

Noise is to be tested according to EN 60704-2-6.

1.7 Analysis methods/Test methods for commercial beverage coolers

Requirement O11 in the criteria for white goods are met for commercial beverage coolers that have a daily energy consumption equal or lower than below "DEC Beverage Cooler":

DEC Beverage Cooler = 0.9 (10^{-6} x V^2+0.003 x V+1.7) in kWh/day whereas V is the gross volume (in liters) according to EN 16902.

For the measurement and calculation of daily energy consumption, standard EN 16902 "Commercial Beverage Coolers – Classification, requirements and test conditions" shall apply.

In brief this standard states that test are being performed:

- at ambient class 3 (25°C, 60%RH),
- with closed door,
- with cooler loaded with maximum load of 330ml cans, and
- in case of an Energy Management Device used, the cooler shall operate in both, day and night mode for 24h, and DEC will be calculated as the average EC of day and night mode.

We refer to EN16902 for exact definitions and test methods for energy measurements according to the requirement.

Noise is to be tested according to EN 60704-2-14/ISO 3744.

Appendix 2 Declaration of chemical products

Manufacture of chemicals (to be completed by chemical manufacturer/-supplier)

Name of chemical product:
Name of the chemical supplier:

Chemical substances (O3)

The following requirement is fulfilled: ☐Yes ☐No

The following substances must not be actively added* to the chemical products named in O2 (for example, cleaning products, paints, lacquers, adhesives, sealants used in final assembly of white goods and surface treatment):

- lead (Pb), mercury (Hg), hexavalent chromium (Cr^{VI}), cadmium (Cd) and their compounds
- halogenated organic substances
- alkylphenols, alkylphenol ethoxylates or other substances that may form alkyphenols or alkylphenol ethoxylates
- phthalates, listed in O8
- volatile organic compounds at more than 1% by weight
- volatile organic compounds (VOC**) at more than 5% by weight in surface treatment agents

** Substances that are not actively added by the chemical manufacturer or its suppliers and that appear in quantities of less than 100 ppm are excluded from the requirement.*

***VOCs are defined as organic compounds that at 293.15 K have a steam pressure of 0.01 kPa or more.*

An exemption to the requirement applies to metal plating of parts, see O4.

Chemical manufacturer/supplier, signature:

Date	Chemical manufacturer/supplier
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 3 Declaration of parts metal plating (O4)

Manufacture of white goods (to be completed by manufacturer/supplier of white good)

Input raw material/component:
Manufacturer/Supplier:

The specified component has not been plated with lead, cadmium, hexavalent chromium or nickel. ☐Yes ☐No

The specified component has been plated with trivalent chromium, nickel, zink or alloys of these where this is necessary on the grounds of chemical or mechanical wear or on the grounds of another specific technical need. ☐Yes ☐No

In cases where parts are plated with trivalent chromium or nickel, please document the reason for this.

_____

_____

_____

☒ Description of the cleaning technology used, as required.

Manufacturer/supplier of the white good, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 4 Declaration of flame retardants (O6) and phthalates (O7) in plastic and rubber parts

Manufacture of white goods (to be completed by manufacturer/supplier of plastic and rubber parts)

Name of white good
Input raw material/component
Manufacturer/supplier

Flame retardants (O6)

The following requirement is fulfilled: ☐Yes ☐No

a) Hexabromocyclododecane (HBCDD), Tris(2-chloroethyl) phosphate (TCEP) and high chlorine short chain and high chlorine medium chain chloroparaffins must not be added.

b) Tetrabromobisphenol A (TBBPA) must not be added.

c) Other halogenated organic flame retardants and other flame retardants that have been given the following risk phrases must not be added:

- H350 (may cause cancer)
- H350i (may cause cancer by inhalation)
- H340 (may cause inherited genetic harm)
- H360F (may damage fertility)
- H360D (may cause harm to the unborn child)
- H360Fd (may damage fertility. Suspect of damaging the unborn child)
- H360Df (may damage the unborn child. Suspect of damaging fertility)

An exemption from requirement b) may be given for printed circuit boards

An exemption from requirement c) may be given for halogenated flame retardants:

- In cases where these are required for electrical or fire safety reasons under the Low Voltage Directive 73/23/EEC or standard EN 60335-1
- Plastic and rubber parts weighing < 25 grams that are integral to electronic parts

The exemption does not apply to the flame retardants governed by a) that are prohibited under the RoHS Directive.

Phthalates (O7)

The following requirement is fulfilled: ☐Yes ☐No

The following phthalates must not be added to plastic or rubber materials:

- Diethylhexyl phthalate (DEHP)
- Dibutyl phthalate (DBP/DnBP)
- Benzyl butyl phthalate (BBP)
- Dicyclohexyl phthalate (DCHP)
- Diisobutyl phthalate (DIBP)
- Diisononyl phthalate (DINP)
- Diisodecyl phthalate (DIDP)
- Di-n-octylphthalate (DNOP)
- Dihexyl phthalate (DHP)
- Diethyl phthalate (DEP)
- Diisoheptyl phthalate (DIHP)
- Bis(2-methoxyethyl) phthalate
- Diisopentyl phthalate
- N-pentyl-isopentyl phthalate

The following are exempted from the requirement:

- Printed circuit boards, PCBs
- Plastic and rubber parts weighing < 25 g that are integral to electronic parts
- Diisononyl phthalate (DINP) in glas doors for commercial beverage coolers

Manufacturer/supplier of plastic and rubber parts, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 5 Declaration of antibacterial properties (O8)

Manufacture of white goods (to be completed by manufacturer/supplier of white good)

Name of white good:
Manufacturer:

Antibacterial properties (O8)

The following requirement is fulfilled: ☐Yes ☐No

- Chemicals or additives that are added to create an antibacterial or disinfectant surface, in or on the product or to be released during the use of the product use, must not be used.

Silver ions, nano silver, nano gold and nano copper are antibacterial substances. An antibacterial chemical inhibits or stops growth of microorganisms such as bacteria, fungi or protozoa (single-celled organisms).

** Definition of nanomaterial follows the EC commissions definition of nanomaterial from 18 October 2011, with exception of the limit for particle size distribution which is reduced to1 %: Nanomaterial means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 1% or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm. This definition counts for the material, also particles outside the interval 1-100 nm as long as 1% of the material are particles of the size 1-100 nm. The definition is valid for particles in both bonded and not bonded form.*

Manufacturer/supplier, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 6 Declaration of foaming agents for insulating foam and refrigerants

Manufacture of white goods (to be completed by manufacturer/supplier of refrigerants and foaming agents)

Manufacturer of insulation foam/refrigerant:
Foaming agent/refrigerant name and type:
Component for insulation:

Foaming agent/Refrigerant GWP_{100}-value: _____

Foaming agent/Refrigerant ODP-value: _____

Manufacturer/supplier, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 7 Declaration refrigerants

To be completed by supplier of refrigerants

Refrigerant name and type:
Manufacturer of refrigerant:
Importer:

Is the refrigerant classified with risk phrases for health or environmental hazard according to directive 57/548/EC or 1999/45/EC alternative CLP nr 1272/2008? ☐Yes ☐No

Foaming agent/Refrigerant GWP_{100}-value: _____

If a refrigerant that is used has a GWP_{100}-value > 100 the construction of the heat pump should prevent leakage and be pressure tested on the production site.

NB!

Please attach safety data sheet according to appendix II in REACH (1907/2006/EC).

Manufacturer/supplier, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 8 Declaration of compliance with applicable laws and provisions in production (O31)

Manufacture of white goods (to be completed by licensee)

Name of white good:
Manufacturer:

The following requirement is fulfilled: ☐Yes ☐No

- The licensee shall ensure compliance with all applicable local laws and provisions at all production facilities for the Nordic Swan Ecolabelled white good. For example, local rules and provisions on health, safety and the working environment, environmental legislation (including REACH) and factory-specific permit terms/conditions are to be followed in the country in which the white good is manufactured.

Details of the local regulatory authority that is responsible for supervision:

_____

_____

_____

Licensee, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail