Nordic Ecolabelling for

# Cleaning products

Version 7.0 • date – date

CONSULTATION

Nordic Ecolabelling

# Contents



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# Contact information

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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# 1 Environmental communication guideline for Nordic Swan Ecolabel cleaning products

Nordic Swan Ecolabelled cleaning products are among the best cleaning products in terms of environmental profile. The whole life cycle of the products is considered, and strict requirements are set for the products' ingredients and packaging. The cleaning products' raw material extraction, production, transportation, use phase, and end of life are considered in the requirements.

Nordic Swan Ecolabelled cleaning products:

- Offer effective cleaning performance
- Promote responsible sourcing of renewable raw materials, and any palm oil or palm kernel oil in the product is RSPO certified.
- Meet strict environmental requirements for chemicals to avoid long-term, negative effects in nature (biodegradability), to avoid harmful chemicals accumulating in animals and humans (bioaccumulation), and to avoid substances that are toxic to, for example, fish and crustaceans (ecotoxicity)
- Meet strict health requirements for chemicals, including a ban on adding substances classified to cause cancer, toxic to reproduction, or to potentially damage genetic material. Also identified or potential endocrine disruptors on up-to-date lists from EU and national authorities or by classification are banned
- Use packaging design and material composition choices that promote material recycling and reduce resource use, contributing to a circular economy

The environmental impacts throughout the lifecycle of this product group and Nordic Swan Ecolabel's identification of where ecolabelling can have the greatest effect is described in Section 6 Environmental impact of cleaning products.

# 2 What can carry the Nordic Swan Ecolabel?

*Product group definition*

The criteria apply to products designed to clean hard surfaces and textile flooring. The products can be in the form of concentrated products, ready-to-use (RTU) products, and mix-it-yourself RTU products. Products for consumers and/or professionals can be labelled.

The product group encompasses cleaning products intended for indoor and outdoor, general and regular cleaning of:

- Fixed surfaces (e.g., floors, walls, ceilings, doors, tiles, sauna)
- Kitchen surfaces and equipment (e.g., work surfaces, kitchen cabinets, stoves, ovens, dishwashers, coffee machines, milk frothers, ice cream makers)
- Sanitary installations (e.g., WCs, baths, showers, wash basins, cabinets)
- Laundry machines
- Windows, glass, and mirrors
- Textile flooring, such as carpeted floors
- Floors with wash polish and wash-and-wax care products
- Outdoor surfaces (e.g, facades, patios, terraces, grills, fireplaces, roofs)

Concentrated products containing micro-organisms are also included in the product group and are subject to specific requirements (see O11 and alternative requirement proposal in Appendix 8).

*Subcategories*

The product group is divided into subcategories. These subcategories are used in requirements where there are several different requirement levels.

- **Concentrated, consumer**: Consumer products that require dilution with water prior to use.
- **RTU, consumer**: Consumer products that are pre-diluted and ready for use straight from the package including foam/spray products.
- **Concentrated, professional**: Professional products that require dilution with water prior to use.
- **RTU, professional**: Professional products that are pre-diluted and ready for use straight from the package including foam/spray products.
- **RTU window cleaner:** Consumer and professional window and glass cleaners that are pre-diluted and ready for use straight from the package including foam/spray products.
- **Outdoor surface cleaners:** Consumer and professional cleaners that are for use outdoors. These are typically concentrated products for large surfaces.

*Products with multiple uses or users*

Concentrated products that can be used both in a diluted state, such as diluted in a bucket of water, and in a more concentrated state, such as diluted with a small quantity of water for use in a foam/spray bottle, must fulfil the requirements for both concentrated (diluted in bucket) and RTU (foam/spray bottle) products.

Products that are sold to both consumers and professionals, but not more than 80% to either group, must meet the stricter requirement where applicable for either consumer or professional products.

Products designed for several areas of use, such as WC and bathroom cleaner (walls, floor, etc.), must fulfil the requirements of each applicable category.

*Other product groups*

Nordic Ecolabelling has separate criteria for other types of cleaning products including:

- Care products for vehicles 013
- Industrial cleaning and degreasing agents 065
- Cleaning agents for use in the food industry 070

Nordic Ecolabelling will decide in case of questions about which product group criteria should be used.

*What cannot be licensed*

Relevant cleaning products in addition to those mentioned above can be included in the product group upon request. However, these criteria do not apply to products intended solely for the purpose of:

- limescale removal
- unblocking blockages, cleaning drains
- restricting or preventing biological growth (algae, mould, bacteria)
- continuous cleaning, e.g., fragrance block for cleaning WCs
- cleaning products for refrigerated rooms
- cleaning wipes
- floor wax and floor polish without cleaning effect

Furthermore, products within the scope of the Biocides Regulation 528/2012 cannot be Nordic Swan Ecolabelled. Products that are marketed as being antibacterial, antimicrobial, antiseptic, and/or disinfectant, or claim to have ingredients that have these properties, cannot be Nordic Swan Ecolabelled, as this does not comply with the Biocides Regulation 528/2012.

The decision on which products can be included in the product group is made by Nordic Ecolabelling.

## 2.1 Justification of the product group definition

For a description of the product group definition, see “What can carry the Nordic Swan Ecolabel”.

*Concentrated vs. ready-to-use products*

Ready-to-use (RTU) products are included in the criteria to address the large market for RTU products, particularly in the consumer market, after considering both advantages and disadvantages in their environmental lifecycle. The primary advantage for RTU is that it can prevent overdosing since the product is pre-diluted in the appropriate concentration for cleaning. Overdosing leads to a higher burden of chemicals released into the environment. Furthermore, overdosing affects all areas of the life cycle since new products are produced

and consumed at an unnecessarily high rate. An environmental disadvantage, however, is the climate impact associated with transporting products with high water content. Another disadvantage is the relatively large amount of packaging required compared to concentrated products. Due to these disadvantages, Nordic Ecolabelling restricts RTU products to those intended for use on smaller surfaces (i.e., it must be clear from the text and pictograms submitted in requirement O1 that the product is intended for small surfaces such as tables, sinks, toilets, mirrors). Furthermore, to address the health risks of exposure to aerosols in spray mist, Nordic Ecolabelling sets a requirement O21 to only allow foam/sprays with a foamer mesh or equivalent aerosol-reducing device. These products are referred to as foam/spray products.

*Mix-it-yourself RTU products*

Mix-it-yourself cleaning products that are to be diluted at least 10 times by the user to form the final RTU product can be Nordic Ecolabelled. Some requirements have been adjusted to clarify how these products should be handled. The concentrated "refill" product may be, for example, a vial, tablet, or water-soluble sheet. The product is diluted in a reusable bottle in a manner that the person handling the concentrated products does not run the risk of coming into contact with the product. These mix-it-yourself RTU products can provide a more accurate dosage compared to a conventional concentrated product where the customer determines the amount of concentrate that is diluted. The ecotoxicity and biodegradability calculation requirements (O12, O13, O14) are based on the diluted solution and use the applicable RTU calculation limits.

*Consumer vs. professional products*

The intended user of the product determines whether the product is consumer, professional or both. The sales channel can also provide a clue who the intended user is.

Consumer products are for use by consumers in or around their home and are primarily sold through retailers. Products are considered for consumer use if more than 80% of sales are to consumers.

Products for professional use are marketed for use in professional contexts such as cleaning services, institutions, and within the public sector. Products sold for use in the workplace are thus not automatically considered to be professional products under this definition. The product is not considered to be professional if it is primarily sold through retailers.

Products that are primarily marketed to consumers, but that are also sold via wholesalers for professional use exist. Products that are sold to both consumers and professionals, are considered for the professional market if more than 80% of sales are to professional users. A threshold of 80% makes it clear that most of the products are sold to that market.

If the product is sold to both consumers and professionals, but not more than 80% to either group, the product will be considered both consumer and professional. Where Nordic Ecolabelling sets different requirements for consumer vs. professional products, the product must meet the stricter requirement. This ensures that both non-professional users and professional users of those products receive the intended benefits and safeguards of the requirements.

If there is any confusion about whether a product is for professionals or consumers, Nordic Ecolabelling may require documentation explaining where the product is intended to be sold.

Note that Nordic Ecolabelling has other product groups for certain professional cleaning product types. For example, kitchen cleaning products for use in cafés, à la carte restaurants, and other smaller, non-institutional kitchens, are included in this product group. Whereas cleaning agents for large-scale food production are included in product group 070 Cleaning agents for use in the food industry.

*Explanation for the product group subcategories*

**Concentrated, consumer:** Concentrated products that require dilution with water prior to use that are designed for the consumer market. Product formats in this subcategory include concentrated liquids, powders, tablets, capsules, and water-soluble sheets.

This subcategory contains products for hard surfaces in the home, such as floors, walls, ceilings, kitchen work surfaces and equipment, ovens, grills, dishwashers, laundry machines, tiles, WCs, bathtubs, and showers. Wash polish/wash-and-wax floor care products are also included. Concentrated products for windows (inside and outside) are included, while RTU products for windows have their own subcategory. Products for use outdoors (other than windows) have their own subcategory.

**RTU, consumer:** Pre-diluted consumer products that are ready to use without dilution including foam/spray products. This includes products for kitchens, ovens, bathtubs, showers, WCs, and so on, but not for large areas such as floors and walls. RTU products shall be intended for use on smaller surfaces and “spot cleaning.” Please note requirement O21 regarding aerosol reducing nozzles. Excluded are RTU window cleaners, which have their own subcategory.

In criteria generation 6, consumer WC cleaners had their own subcategory, but license data showed this differentiation from other RTU products was not needed.

**Concentrated, professional:** This subcategory includes professional products that require dilution with water prior to use. Product formats in this subcategory include concentrated liquids, powders, tablets, capsules, and water-soluble sheets.

This subcategory contains products for indoor surfaces, such as floors, walls, ceilings, kitchen work surfaces and equipment, ovens, grills, tiles, WCs, bathtubs, and showers. Wash polish/wash-and-wax floor care products are also included. Chemical products for cleaning of textile flooring are also included in this sub-category. Concentrated products for windows (inside and outside) are included, while RTU products for windows have their own subcategory. Products for use outdoors (other than windows) have their own subcategory.

**RTU, professional:** Professional products that are pre-diluted and ready for use including foam/spray products. This category includes products for WCs, kitchens, bathtubs, showers, etc., but not for large areas such as floors and walls. RTU products shall be intended for use on smaller surfaces and “spot cleaning.” Please note requirement O21 regarding aerosol reducing nozzles.

Excluded are RTU window cleaners, which have their own subcategory. Foam products for large surfaces, for example, industrial food-production kitchens are included in product group 070 Cleaning agents for use in the food industry.

**RTU window cleaners:** Consumer and professional window and glass cleaners that are pre-diluted and ready for use straight from the package including foam/spray products. Please note requirement O21 regarding aerosol reducing nozzles.

**Outdoor surface cleaners:** Consumer and professional cleaners that are for use outdoors. These are typically concentrated products for large surfaces like facades, patios, and terraces. They can also be used to clean, for example, outdoor grills, fireplaces, decking, and roofs. Since these products do not pass through a water treatment facility before entering the environment, strict chemical limits have been set for toxicity and biodegradability.

Specialized outdoor products for graffiti removal and cleaning for solar modules are covered under PG 065 Industrial cleaning and degreasing agents. Car, boat, and other vehicle cleaners are covered under PG 013 Care products for vehicles.

*Subcategory types from criteria generation 6 that are now merged into other subcategories*

For criteria generation 7, an effort was made to simplify the number of subcategories. License data supported combining some subcategories for the purpose of setting limit values.

Wash polish/wash-and-wax care products for floors, combined cleaning and polish improvers, are now included in the concentrate subcategories (consumer or professional). These floor cleaning products are diluted prior to use and contain care products: film-forming components such as polymers, resin and/or wax. (For wash polish products for cars and boats, see "Care products for vehicles.")

*Waters for cleaning*

Nordic Ecolabelling has evaluated different types of "waters" for cleaning. Nordic Ecolabelling takes a positive stance on using fewer chemical ingredients for cleaning, provided the desired cleaning effect is still achieved. However, these "waters" cannot all be regarded in the same way, as the health and environmental impacts of their ingredients and cleaning efficacy vary significantly. Therefore, they are evaluated from a life cycle perspective as described on the Nordic Swan Ecolabel website.[1]

*Products which cannot be Nordic Swan Ecolabelled as cleaning products*

Cleaning wipes were examined to assess whether they should be included in this product group. Wipes are usually made of paper or textiles and moistened with water and various chemicals, depending on the area of use. The most common type of wipes is personal hygiene products such as baby wipes, face wipes and so on, which are included in the criteria for the Nordic Swan Ecolabelling of cosmetics to make a difference in an already well-established product type. There are also wipes for cleaning fixed surfaces, and these are known as cleaning wipes. While also a growing market, the cleaning wipe format is still a limited share of the whole Nordic cleaning products market. Since the wipe material cannot be sent for material recovery, Nordic Ecolabelling decided not to expand the product group to include wipes. Nordic Ecolabelling does not wish to promote a product that cannot be recycled, and that risks being thrown down the toilet, when there are less resource-intensive alternatives. Disposable wet wipes are not compatible with the circular economy in the opinion of Nordic Ecolabelling.

[1] https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-and-microplastics/waters-for-cleaning/

Cleaning products intended for certain specialist cleaning purposes cannot be ecolabelled under these criteria. This includes products intended solely for the purpose of:

- limescale removal
- unblocking blockages, cleaning drains
- restricting or preventing biological growth (algae, mould, bacteria)
- total or partial disinfection
- continuous cleaning, e.g., fragrance block for cleaning WCs
- cleaning products for refrigerated rooms
- floor wax and floor polish without cleaning effect

These products are not included in these criteria, since the criteria are aimed at more general and regular cleaning. In some cases, these products use very corrosive or biocidal ingredients that for safety or environmental reasons are not permitted in this product group. In other cases, they have quite different formulations than cleaning products so they would not pass in this product group.

In the event of dispute, Nordic Ecolabelling will determine whether a product may be ecolabelled under these criteria.

# 3 How to read this criteria document

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:

- Upload
- Requirement checked on site

To be awarded a Nordic Swan Ecolabel licence:

- All obligatory requirements must be fulfilled.
- Nordic Ecolabelling must inspect the site.

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

# 4 Summary

Cleaning products designed for general and regular cleaning of hard surfaces and textile flooring are eligible for the Nordic Swan Ecolabel. The criteria document applies to cleaning products for indoor and outdoor use by consumers and professionals in the form of concentrated products and ready-to-use (RTU) products including mix-it-yourself RTU products.

Nordic Ecolabelling recognizes a good potential to reduce important environmental impacts of cleaning products by setting requirements for:

- Raw material sourcing, section 5.2 - including requirements for plant materials for production of chemical raw materials (especially palm oil)
- Ingoing substances, section 5.3 - addressing exposure of chemicals harmful to health
- Ecotoxicity and biodegradability, section 5.4 - addressing impacts to aquatic organisms and ecosystems
- Performance, section 5.5 - to avoid ineffective products that lead to overdosing, a problem that wastes both raw materials and packaging while increasing air and water pollution
- Packaging, section 5.6 - to address plastic and other packaging raw material resource use and recyclability
- License maintenance, section 5.7 - to ensure quality and traceability needed to ensure fulfilment of Nordic Ecolabelling requirements

Changes to the requirements from the previous generation of the criteria include:

- The product group definition clarifies overlaps with other product groups while expanding the product group to include additional product types including outdoor surface cleaners, kitchen equipment cleaners, and dishwasher machine cleaners
- Supply Chain Policy and Supplier Code of Conduct (requirement O3) are added
- The new EUH hazard classes for endocrine disruptors, PBT/vPvB, PMT/vPvM, STOT RE 1, and ozone are added to the prohibited classifications for ingoing substances
- The list of excluded substances is expanded with new substances/substance groups, and the definitions for potential or identified endocrine disruptors, microplastics, and nanomaterials/-particles are updated
- The restricted fragrance substances which are subject to declaration now includes the expanded list from the Cosmetics Regulation
- An alternative requirement text for products containing micro-organisms has been proposed in Appendix 8. The possibility for labelling products containing micro-organisms for the consumer market has also been proposed.
- Surfactants are no longer exempted from the long-term environmental effects requirement and the limit values have been adjusted
- CDV and biodegradability limits are stricter, and calculations must be based on the DID-list version 2023 or later
- The performance test for professional products has stricter requirements for the user-tests

- For rigid plastic packaging of PE and PP, the label must be made of the same plastic material as the container, and paper labels are no longer permitted at all

## 4.1 Changes compared to previous generation

In generation 7, specific requirements for wash polish/wash-and-wax care products have been incorporated into the requirements for all product types and no longer have their own section. This applies to requirements O16-O26 in generation 6 which are now incorporated into requirements O2-O17 in generation 7. Furthermore, the environmental management and regulatory requirements (O30-O36 in generation 6) have been changed to "License maintenance" requirements O22-O23 in generation 7. As a result, the numbering of many of the criteria has changed.

Other proposed changes from generation 6 to 7 are listed below.

**Overview of changes to criteria for cleaning products generation 7 compared with previous generation 6.**

| Proposed requirement generation 7 | Requirement generation 6 | Same requirement | Change | New requirement | Comments |
|---|---|---|---|---|---|
| O1 Description of the product | O1 | X | | | |
| O2 Classification of the cleaning product | O5, O16 | | X | | New EUH hazard classes added |
| O3 Supply Chain Policy and Code of Conduct | O2 | | X | | Supply Chain Policy and Supplier Code of Conduct now required |
| O4 Certified raw materials from oil palms | O3 | | X | | Minor adjustments to required documentation |
| O5 Classification of ingoing substances | O6, O17 | | X | | New EUH hazard classes, STOT RE1, and ozone hazard classes added |
| O6 Excluded substances | O7, O18 | | X | | Definitions for endocrine disruptors and nanoparticles updated. New substances added. All isothiazolinones, siloxanes, and phosphorous are excluded. |
| O7 Microplastics | | | | X | Updated with REACH definition and made into its own requirement (previously in O7,O18 Prohibited substances) |
| O8 Surfactants | O4 | | X | | Refers to DID list 2023 or later |
| O9 Fragrances | O8, O19 | | X | | Includes expanded list of fragrance allergens from Cosmetics Regulation |

| | | | | | |
|---|---|---|---|---|---|
| O10 Preservatives | O9, O20 | | X | | Changed definition of bioaccumulating |
| O11 Micro-organisms | O10 | | X | | Proposed alternative requirement in Appendix 8 with changed requirements and documentation in communication with EU Ecolabel, plus proposal for labelling products for consumer market |
| O12 Long-term environmental effects | O11, O21 | | X | | Removed exemption for surfactants and included M-factor. Changed product subcategories and raised long-term effects calculation limits for all subcategories except outdoor cleaning products, which was lowered. |
| O13 Critical dilution volume | O12, O22 | | X | | Changed product subcategories and tightened CDV calculation limits by about 50%. Removed exemption for high molecular weight substances. |
| O14 Aerobic and anaerobic biodegradability | O13, O23 | | X | | Changed product subcategories and tightened aNBO and anNBO calculation limits by about 50%. Removed exemption for high molecular weight substances. |
| O15 Performance test – laboratory test | O14, O24 | X | | | |
| O16 Performance test – user test | O15, O25 | | X | | User test must now be conducted by ten users who are professional cleaning staff |
| O17 Recycling design of packaging | O26-A | X | | | |
| O18 Labels for rigid plastic packaging | O26-B | | X | | Updated label requirements to improve recyclability |
| O19 Recycling design of pouches | O27 | X | | | |
| O20 Weight-Utility Ratio | O28 | X | | | |
| O21 Packaging for foam/spray products and concentrated products for refill | O29 | X | | | |

| | | | | | |
|---|---|---|---|---|---|
| O22 Customer complaints | | | | X | |
| O23 Traceability | O35 | | X | | Editorial changes |
| | O30 Responsible person and organizatons | | | | Removed |
| | O31 Documentation | | | | Removed |
| | O32 Quality of the cleaning product | | | | Removed |
| | O33 Planned changes | | | | Removed |
| | O34 Unplanned nonconformitites | | | | Removed |
| | O36 Legislation and regulations | | | | Removed |
| Appendix 1 Declaration from the manufacturer of the cleaning product | Appendix 2 | | X | | Updated based on new hazard classes and excluded substances |
| Appendix 2 Declaration from the manufacturer/supplier of the raw material | Appendix 3 | | X | | Updated based on new hazard classes and excluded substances |
| Appendix 3 Analyses, test methods, and calculations | Appendix 1 | | X | | Updated based on new standards and definitions |
| Appendix 4 Declaration from the manufacturer of the primary packaging | Appendix 4 | | X | | Updated label declaration |
| Appendix 5 Laboratory test | Appendix 5 | X | | | Specified the prolonged effectivity test for products with micro-organisms |
| Appendix 6 User test: Information and requirements | Appendix 6a - 8b | | X | | User test must now be conducted by ten users who are professional cleaning staff |
| Appendix 7 User test for wash polish/wash-and-wax care products | Appendix 9a – 9b | | X | | Updated to ten users |
| Appendix 8 Micro-organism requirement alternative proposal | (O10) | | X | | Option to accept consumer products with micro-organisms. New methods and documentation requirements |

# 5 Requirements and justification of these

The requirements in the criteria document and accompanying appendices apply to all ingoing substances in the Nordic Swan Ecolabelled product. 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.

# Definitions

| Terms | Definition |
|---|---|
| RTU (Ready- to-use) | Cleaning products that are pre-diluted and ready for use directly on the area or object of cleaning. |
| Concentrated products | Cleaning products that need to be diluted with water before use on the area or object of cleaning. |
| Mix-it-yourself RTU products | Cleaning products that are to be diluted at least 10 times by the user to form the final RTU product. The product may be, for example, a vial, tablet, or water-soluble sheet. The product is diluted in a reusable bottle in a manner that the person handling the concentrated products does not run the risk of coming into contact with the product. In the previous generation, these products were called concentrated products for refill for RTU bottles. |
| Foam/spray products | The term "foam/spray" is used to denote foam or spray products. In accordance with requirement O21, these have a nozzle that reduces aerosol formation. |
| Consumer products | Cleaning products for use by consumers in or around their home that are primarily sold through retailers. Products are considered for consumer use if more than 80% of sales are to consumers. |
| Professional products | Cleaning products that are marketed for use in professional contexts such as cleaning services, institutions, and within the public sector. Products sold for use in the workplace are thus not automatically considered to be professional products under this definition. The product is not considered to be professional if it is primarily sold through retailers.<br>Products that are primarily marketed to consumers, but that are also sold via wholesalers for professional use exist. Products that are sold to both consumers and professionals, are considered for the professional market if more than 80% of sales are to professional users. A threshold of 80% makes it clear that the majority of the products are sold to that market. |
| Products for both professionals and consumers | For products sold to both consumers and professionals, but not more than 80% to either group. Where applicable, these products must meet the stricter requirement for either consumer or professional products. |
| Calculation sheet | An Excel sheet applicants must use to calculate limit values e.g., CDV, aNBO, anNBO, WUR. Can be downloaded from the Nordic Swan Ecolabel website. |
| Micro-organism | Any microbiological entity, whether cellular or non-cellular, capable of replication or of transferring genetic material, including viruses, viroids, and animal and plant cells in culture.[2] |
| Ingoing substances | All substances* in the cleaning product including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g. biocidal active substances generated by preservatives, such as formaldehyde, and arylamine and in situ-generated preservatives) are also regarded as ingoing substances. Foil that is not removed before use of the product, and that is water soluble is also considered ingoing substances. |

[2] https://eur-lex.europa.eu/eli/dir/2009/41/oj/eng

| | |
|---|---|
| | **N.B. the difference from the definition of substances in the REACH Regulation (EC) No 1907/2006. Whereas a REACH substance encompasses a chemical element or compound as well as its stabilising additives and process impurities, a substance here refers to each of the constituents separately. The constituents of a UVCB substance (Unknown or Variable composition, Complex reaction products or of Biological materials) are also regarded separately, and all known constituents shall be regarded.* |
| Impurities | Trace levels of pollutants, contaminants and residues from production, including production of raw materials that remain in the cleaning product in concentrations ≤ 100 ppm (≤0.0100 w%, 100,0 mg/kg). For formaldehyde other than as a biocidal active substance and for arylamine, the corresponding concentration is ≤ 25 ppm (≤ 0.0025 w%).<br>*Examples of impurities: Background environmental pollutants from feedstock, as well as contaminants and residues from production such as reactants (incl. monomers), reagents, catalysts, by-products, scavengers, detergents for production equipment, and carry-over from other or previous production lines.*<br>Impurities in the raw materials in concentrations ≥ 10 000 ppm (≥1.0000 w%) are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled product. |
| DID-list | The DID-list (Detergent Ingredient Database) part A contains information on toxicity and degradability of several substances that are used in cosmetic products. If an ingoing substance is included on the DID-list, the data from the DID-list must be used for calculations of the amount of aerobic/anaerobic non-biodegradable organics, the critical dilution value and biodegradability and toxicity. If a substance is not included on the DID-list, or data is missing, the methods described in part B of the DID-list must be used. For this criteria generation, the DID-list dated 2023 or later versions apply. See further details in Appendix 3. The DID-list can be obtained from the Nordic Swan Ecolabelling websites. |
| Primary packaging | In accordance with EU Directive 94/62/EC on packaging and packaging waste, the term "primary packaging" is defined as consumer packaging, i.e., packaging conceived to constitute a sales unit to the final user or consumer at the point of sale. |
| Container | Bottles, foam/spray bottles and similar. |
| Closure | Caps/lids, dosage equipment, pumps and foam/spray triggers mounted on the packaging. |
| Label | Traditional label and shrink film label/sleeve. |
| Concentrated product, main packaging | Packaging containing the undiluted concentrated product, which is to be diluted with water in a refillable packaging. |
| Concentrated product, refillable packaging | Packaging in which the concentrated product is diluted with water and thus refilled multiple times. |

## 5.1 General requirements

The requirements (O1-O23) are for all product types, unless otherwise stated.

In generation 7, the requirements for wash polish/wash-and-wax products are incorporated into the requirements for all product types and no longer have their own section.

### O1 Description of the product

The applicant must provide the following information about the product:

- Description of the product, including its area of use, in accordance with “What can carry the Nordic Swan Ecolabel?” (consumer/professional product, RTU/ concentrated, etc.)
- User instructions that clearly explain how the product should be used.
- If the product is designed to be diluted before use, the recommended dose for normal soiling/normal use must be stated clearly and simply on the primary packaging and in the technical product data sheet

  - For consumer products, the dosing must be stated as x number of millilitres to y litres of water or as z number of caps to y litres of water.
  - For products intended for professional use, the dosing may, for example, be stated as x ml or an equivalent y pump or similar per z litre of water. The information sheet or technical data sheet must include a recommendation on dosing equipment (e.g., pump, measuring vessel, pipette or similar).
- A complete formulation for the product. Foil that is not removed before use of the product, and that is water soluble is considered as part of the formulation/recipe. The formulation must for each ingoing raw material include:
  - Trade name
  - Chemical name for the main component, and, if relevant, additives (e.g., colorants, preservatives and stabilizers)
  - Amount (both with and without solvents, e.g., water)
  - CAS no. / EC no.
  - Function
  - DID no. for substances that can be placed in the DID list*
- A safety data sheet for each ingoing raw material

**The DID number is an ingredient's number on the DID list, version 2023 or later, which is used in calculating chemical requirements. The DID list can be obtained from Nordic Ecolabelling's websites, see contact information at the beginning of the document.*

- Description of the product in accordance with "What can carry the Nordic Swan Ecolabel?", e.g. label or other documentation. Label and product data sheet (if available) that includes dosing and user instructions. The information on labels and/or product data sheets must be in the languages in which the product is marketed.
- A complete recipe in line with the requirement. Nordic Swan Ecolabelling's calculation sheet can be used and can be obtained from Nordic Ecolabelling's websites.
- Safety data sheets for each raw material in line with prevailing legislation in the country of application, e.g., Annex II to REACH (Regulation 1907/2006/E2EC).

### Background to requirement O1

A description of the product (e.g., label) and its areas of use is required to assess whether the product falls within the product group definition. Since the criteria for cleaning products cover several product categories and products intended for different usage, it is important for Nordic Ecolabelling to receive product information concerning area of use, dilution, and market (professional/consumer).

Dosing of the cleaning product is an important parameter for preventing over-dosing. Over-dosing has a major impact in the form of unnecessary quantities of chemicals being discharged into the environment. All phases of the life cycle are affected by over-dosing, since it causes unnecessary raw material production, manufacturing and transport.

Under the requirement, users must be given clear instructions about how to use the product. Products that require dilution before use must have a label and/or product data sheet explaining how to dilute the product. Data sheets for professional products must state which dosing equipment is recommended.

Nordic Ecolabelling needs to know the complete formulation, with all constituent substances. This is necessary to check the individual requirements and make the necessary calculations. Foil that is not removed before use of the product, and that is water soluble is considered as part of the formulation/recipe.

The safety data sheets must be updated in line with European legislation, which at the time of writing the criteria means compliance with Appendix II of REACH (Regulation (EC) No 1907/2006 as amended by Regulation (EU) 215/830).

## O2 Classification of the cleaning product

The cleaning product must not be classified with any of the hazards from CLP Regulation (EC) No 1272/2008 listed below.

**Table 1 Excluded hazards**

| Hazard Class | Hazard Category | Hazard Statement Code |
|---|---|---|
| Hazardous to the aquatic environment | Aquatic Acute 1<br>Aquatic Chronic 1<br>Aquatic Chronic 2<br>Aquatic Chronic 3<br>Aquatic Chronic 4 | H400<br>H410<br>H411<br>H412<br>H413 |
| Hazardous to the ozone layer | Ozone | H420 |
| Acute toxicity * | Acute Tox. 1 or 2<br>Acute Tox. 1 or 2<br>Acute Tox. 1 or 2<br>Acute Tox. 3<br>Acute Tox. 3<br>Acute Tox. 3<br>Acute Tox. 4<br>Acute Tox. 4<br>Acute Tox. 4 | H300<br>H310<br>H330<br>H301<br>H311<br>H331<br>H302 *<br>H312 *<br>H332 * |
| Specific target organ toxicity: single or repeated exposure | STOT SE 1<br>STOT SE 2<br>STOT SE 3<br>STOT RE 1<br>STOT RE 2 | H370<br>H371<br>H335 **, H336 **<br>H372<br>H373 |
| Skin corrosion *** | Skin Corr. 1A, 1B or 1C | H314 *** |
| Aspiration hazard | Asp. Tox. 1 | H304 |
| Respiratory or skin sensitisation<br><br>No hazard class | Resp. Sens. 1, 1A or 1B<br>Skin Sens. 1, 1A or 1B<br><br>No hazard category | H334<br>H317<br><br>EUH208 "Contains (name of sensitising substance). May cause an allergic reaction." |
| Carcinogenicity**** | Carc. 1A or 1B<br>Carc. 2 | H350 ****<br>H351 **** |
| Germ cell mutagenicity**** | Muta. 1A or 1B<br>Muta. 2 | H340 ****<br>H341 **** |
| Reproductive toxicity**** | Repr. 1A or 1B<br>Repr. 2 | H360 ****<br>H361 **** |

| | | |
|---|---|---|
| | Lact. | H362 **** |
| Endocrine disruption for human health | ED HH 1<br>ED HH 2 | EUH380<br>EUH381 |
| Endocrine disruption for the environment | ED ENV 1<br>ED ENV 2 | EUH430<br>EUH431 |
| Persistent, bioaccumulative and toxic properties<br>Very persistent, very bioaccumulative properties | PBT<br>vPvB | EUH440<br>EUH441 |
| Persistent, Mobile and Toxic properties<br>Very Persistent, Very Mobile properties | PMT<br>vPvM | EUH450<br>EUH451 |

** Exemption: Professional products can be labelled with Acute toxicity, Category 4 with H332, H312, H302 if the packaging is designed so that the user does not come in contact with the product*

*** Applies only to foam/spray products*

**** Exemptions:*

- Professional products where classification is due to pH.
- WC-products for consumers where the classification is due to pH.

***** Includes all classification variants (e.g., H350 also covers H350i).*

- A safety data sheet (SDS) prepared in accordance prevailing European legislation (Annex II of REACH Regulation (EC) No 1907/2006) for the cleaning product.
- Appendix 1 or equivalent, completed and signed.
- Description of the packaging design showing that the user is not in contact with the product for the professional products for which an exemption is made from the requirement of classification as H332, H312 and/or H302. Documentation in the form of a technical description and user instructions showing how the user avoids contact with the product.
- Documentation confirming that the product (professional products and WC products for consumers) has been classified as corrosive due to its pH value if an exemption is made for H314.

### Background to requirement O2

Nordic Ecolabelling aims to minimize the health and environmental impact of Nordic Swan Ecolabel products. Therefore, cleaning products with the following classifications cannot be certified: hazardous to the aquatic environment, hazardous to the ozone layer, acutely toxic, causes damage to organs, causes skin corrosion, aspiration toxic, sensitising, carcinogenic, mutagenic, toxic for reproduction, endocrine disruptive, and persistent, bioaccumulative/mobile and toxic.

The updated CLP classifications now include endocrine disruptors, PBT/vPvB and PMT/vPvM substances, covering environmental toxicity, persistence, mobility and bioaccumulation. Including PMT and vPvM substances is essential due to their persistence, mobility and potential impact on water quality. The new rules entered into force 20 April 2023. From this date, the Member States may propose harmonized classification and

labelling (CLH) with the new hazard classes and manufacturers, importers, downstream users and distributors may also self-classify their substances and mixtures accordingly.

There are transitional periods following the Delegated Regulation's into force. During these periods classification under the new hazard classes is voluntary. Manufacturers, importers, downstream users and distributors are not yet required to classify their substances or mixtures according to the new hazard classes. During these periods, the new hazard classes can be applied on a voluntary basis. However, any product classified according to these new hazard classes will be excluded under these criteria.

This is a standard requirement, based on the precautionary principle and is only partially tailored to the specific product group.

The exemption for professional products regarding classification as H332, H312 and/or H302 (Acute Tox. 4) is included for products where the manufacturer can show that the packaging is designed to prevent the user from coming into contact with the product. In this case, a technical description and user instructions showing how the user avoids contact with the product must be present.

A classification as corrosive, such as Skin Corr 1 with H314, is also exempted for professional products and WC products, where the classification is due to pH (cf. CLP Annex I: 3.2.3.1.2). This exemption has been made to allow the ecolabelling of highly concentrated products and products intended for areas of use where extreme pH values are required to achieve good performance. Strongly acidic products, for example, may be needed to clean sanitary installations in the professional market, which usually uses more concentrated products that are then diluted automatically.

For criteria generation 7, an exemption has been removed for wash polish/wash-and-wax care products containing methylisothiazolinone, causing the product to be labelled with the hazard phrase EUH208 ""Contains (name of sensitising substance). May cause an allergic reaction." Since there has been time for manufacturers to change to other less hazardous alternatives, this exemption was removed. Isothiazolinones are no longer allowed in Nordic Ecolabelled cleaning products.

The classification of the cleaning product requirement applies to mix-it-yourself RTU products in concentrated form, since refills are sold as concentrates and so the classification regulation (CLP) relates to the concentrated form. This is because consumers can be exposed to the product in concentrated form when diluting the concentrated product. Therefore, these products are no longer allowed to be labelled with hazard phrase EUH208.

The specific requirements for foam/spray products (i.e., ban of STOT SE 3) only apply to foam/spray products in an in-use solution.

The requirement has been updated since the previous generation to take account of current legislation and refers to the CLP Regulation 1272/2008.

The requirement also relates to the industry's self-classification.

## 5.2 Raw material sourcing

The requirements for raw material sourcing include two requirements:

- Supply Chain Policy and Code of Conduct
- Certified raw materials from oil palms

## O3 Supply Chain Policy and Code of Conduct

The licence holder must have a) supply chain policy and b) a Code of Conduct for responsible sourcing of minerals and renewable raw materials* used in the cleaning product. The supply chain policy and code of conduct must be both public and communicated to the supply chain. Licence holders that are micro companies with maximum 10 employees are exempted.

a) The supply chain policy must include the following:

- A policy statement committing the licence holder to respect human rights and the environment within its operations and supply chain; this includes a commitment to support suppliers' compliance with the supplier code of conduct by engaging in responsible purchasing practices.
- Commitment to comply with all applicable local, national- and international environmental laws and regulations, as well as all applicable health and safety regulations.
- A description for governance processes in place for Due Diligence; this includes routines for assessing biodiversity and deforestation risk along the whole supply chain.

b) The supplier Code of Conduct must inform all suppliers of what is expected of them with respect to the Licensee's supply chain policy regarding human rights and protecting the environment.

**Renewable raw materials compose of biomass and that can be continually replenished for example wood, crops, marine products, organic waste or be recycled raw materials*

- ☐ Submit supply chain policy according to the requirement or reference to info on webpage.
- ☐ Submit supplier Code of Conduct according to the requirement or reference to info on webpage.
- ☐ Submit information on how the supply chain policy and supplier Code of Conduct are public and communicated to the supply chain.

### Background to requirement O3

Supply chain management is the handling of the entire process of turning raw materials into a final product. Supply chain policy reflects the companies' requirements and responsibilities for sourcing raw materials along the whole supply chain. This applies both to renewable raw materials and minerals. The policy must commit the company to respect human rights and the environment and comply with local and international laws and regulations (deforestation risks (EUDR[3]), environmental, health and safety) along the whole supply chain. The policy must also describe the governance processes in place for Due Diligence especially for assessing biodiversity and deforestation risk in the supply chain.

The licensee must in addition also present its supplier Code of Conduct that defines and describes what is expected and required of suppliers in the supply chain. The supply chain policy and code of conduct must be both public and communicated to the supply chain.

[3] https://green-business.ec.europa.eu/deforestation-regulation-implementation_en (visited August 2024)

The requirement for supply chain management reflects new EU legislation, e.g., due diligence directive (draft proposal) and new forest deforestation legislation, and how commodity companies work today. The EU due diligence directive applies at first hand to companies with +250 employees. Nordic Ecolabelling supports the new legislation but recognizes that this can be a huge workload for small businesses. Companies with less than 10 employees are therefore exempted from the requirement.

### O4 Certified raw materials from oil palms

If renewable raw materials from palm oil are used in the product, the palm oil/palm kernel oil must be RSPO certified. This also includes by-products, residues, and waste fractions from palm oil industries, such as palm fatty acid distillate and palm effluent sludge. Traceability must be ensured by Mass Balance, Segregated, or Identity Preserved. Book and Claim are not accepted.

The requirement does not apply to substances derived from palm oil/palm kernel oil in raw materials where the substances amount to < 1% in the cleaning product.

- Appendix 2 or equivalent declaration completed and signed by all relevant raw material manufacturers/suppliers.
- A valid RSPO Supply chain certificate from all relevant raw material manufacturers/suppliers or a valid RSPO Supply chain certificate from the manufacturer of the cleaning product.

- By request, the manufacturer of the cleaning product must present invoices/delivery notes/order confirmation that the palm oil purchased is RPSO certified and information about traceability system (Mass Balance, Segregated or Identity Preserved accepted).
- By request, the manufacturer of the cleaning product must, if they are RSPO Chain of Custody certified, present a third party-controlled balance sheet showing RSPO certified raw materials being accounted/recorded to the cleaning product(s).

**Background to requirement O4**

Palm oil plantations are often established at the expense of tropical rainforest and other protected areas. This is one of the biggest threats to biodiversity in Southeast Asia, leading to the loss of valuable species, habitats, ecosystems, and landscapes. Hence, palm oil is part of EU´s Regulation on deforestation-free products.

Palm oil is widely used as an ingredient or feedstock for chemical substances and therefore difficult to exclude in NSE products. Therefore, if palm oil is used in the product the palm oil/palm kernel oil, including by-products or residues, must be RSPO certified. Traceability must be ensured by Mass Balance, Segregated, or Identity Preserved. Book and claim are not accepted as there is no link between the claim for certified palm oil and the product itself.

The manufacturer or supplier of palm oil must present a valid RSPO Supply chain certificate (RSPO SCC certificate). The certificate/RSPO schemes ensures and controls the flow of certified claims throughout the supply chain. The manufacturer of the Nordic Swan Ecolabelled product must by request present invoices/delivery notes/order confirmation that the palm oil purchased is RSPO certified. The type of traceability (Mass Balance, Segregated or Identity Preserved) must be apparent from the documentation.

In cases where the Manufacturer of the Nordic Swan Ecolabelled product is RSPO Chain of Custody certified, the applicant must by request present a third party-controlled balance sheet showing RSPO certified raw materials being accounted/recorded to the Nordic Swan Ecolabelled product(s). This to ensure that RPSO raw materials (credits) are used in the Nordic Swan Ecolabelled product(s).

## 5.3 Requirements for ingoing substances

The requirements for ingoing substances include seven requirements:

- Classification of ingoing substances
- Excluded substances
- Microplastics
- Surfactants
- Fragrances
- Preservatives
- Micro-organisms

The requirements apply to all ingoing substances in the Nordic Swan Ecolabelled product. Impurities are not regarded as ingoing substances and are exempt from the requirements.

Ingoing substances and impurities are defined in the Definitions table.

Foil that is not removed before use of the product is considered as part of the formulation/recipe.

### O5 Classification of ingoing substances

Ingoing substances must not be classified with the hazards from CLP Regulation (EC) No 1272/2008 listed below.

**Table 2 Excluded hazards**

| Hazard Class | Hazard Category | Hazard Statement Code |
|---|---|---|
| Hazardous to the ozone layer | Ozone | H420 |
| Specific target organ toxicity: Repeated exposure | STOT RE 1 | H372 |
| Respiratory or skin sensitisation * | Resp. Sens. 1, 1A or 1B<br>Skin Sens. 1, 1A or 1B | H334 *<br>H317 * |
| Carcinogenicity ** | Carc. 1A or 1B<br>Carc. 2 | H350 **<br>H351 **,*** |
| Germ cell mutagenicity ** | Muta. 1A or 1B<br>Muta. 2 | H340 **<br>H341 ** |
| Reproductive toxicity ** | Repr. 1A or 1B<br>Repr. 2<br>Lact. | H360 **<br>H361 **<br>H362 ** |
| Endocrine disruption for human health**** | ED HH 1<br>ED HH 2 | EUH380 ****<br>EUH381 **** |
| Endocrine disruption for the environment**** | ED ENV 1<br>ED ENV 2 | EUH430 ****<br>EUH431 **** |
| Persistent, Bioaccumulative and Toxic properties**** | PBT | EUH440 **** |

| | | |
|---|---|---|
| Very Persistent, Very Bioaccumulative properties**** | vPvB | EUH441 **** |
| Persistent, Mobile and Toxic properties | PMT | EUH450 |
| Very Persistent, Very Mobile properties | vPvM | EUH451 |

** Exemptions:*

- Enzymes (including stabilisers and preservatives in the enzyme raw material) can be included if they are in liquid form or granulate capsules.
- Micro-organisms in some products, see also requirement O11 Micro-organisms.
- Fragrance can be included in some types of the final product, see requirement O9 on fragrances.
- Sensitising preservatives, but see also requirement O6 Excluded substances and O10 Preservatives.

*** Includes all classification variants (e.g. H350 also covers H350i).*

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

**** See also O6 Excluded substances for additional requirements for potential or identified endocrine disruptors and PBT/vPvB substances

- A safety data sheet (SDS) for all raw materials, prepared in accordance with Annex II of REACH Regulation (EC) No 1907/2006.
- Appendix 1 and Appendix 2 or equivalent, completed and signed.

### Background to requirement O5

Nordic Ecolabelling strives to ensure that the health and environmental impact of the products are as low as possible. The requirements therefore make it clear that ingoing substances with the following classifications cannot be used in the Nordic Swan ecolabelled product: hazardous to the ozone layer, causes damage to organs, sensitising, carcinogenic, mutagenic, toxic for reproduction, endocrine disruptors, and persistent, bioaccumulative/mobile and toxic.

The new CLP classifications for endocrine disruptors, PBT/vPvB and PMT/vPvM (environmental toxicity, persistency, mobility and bioaccumulation) are included. The inclusion of PMT and vPvM substances is crucial due to their persistence, mobility and potential impact on water quality. The new rules are in force as of 20 April 2023. From this day on, the Member States can make proposals for harmonized classification and labelling (CLH) with the new hazard classes and manufacturers, importers, downstream users and distributors can self-classify their substances and mixtures accordingly.

There are transitional periods from the entry into force of the Delegated Regulation, during which manufacturers, importers, downstream users and distributors are not yet required to classify their substances or mixtures according to the new hazard classes. During these periods, the new hazard classes can be applied on a voluntary basis. However, if an ingoing substance is classified according to these new hazard classes and used in a product, it will be excluded under these criteria.

This is a standard requirement, that is set by the precautionary principle and is only partially adapted to the product group. The requirement is intended to exclude problematic substances that might be added to products in the future, even if they are not necessarily found in products on the market today.

Complexing agents GLDA and MGDA contain small quantities of NTA (CAS 139-13-9, classified as Carc2 H351) as residues from raw material production (as attested in various safety data sheets for the raw materials). Nordic Ecolabelling's review of licensed products shows that there is a need to use these complexing agents in cleaning products. NTA as an impurity in complexing agents is therefore exempted from the requirement, but subject to the limitation that the concentration of NTA in the raw materials must be below 0.1% by weight, and that the concentration of NTA in the end-product must be below 0.1% by weight.

The substances that are most often classified as sensitising in cleaning products are fragrance substances, preservatives, micro-organisms, and enzymes. Nordic Ecolabelling restricts these substances via other requirements: O6 Excluded substances, O9 Fragrances, O10 Preservatives, O11 Micro-organisms.

Enzymes

Enzymes are exempt from the requirement prohibiting sensitising substances, since it is difficult to find enzymes that are not classified as sensitising and the positive environmental effects of enzymes are substantial. However, only enzymes in liquid form or in the form of granules are permitted to reduce the risk of dust-forming enzymes in the manufacture of cleaning products. The exemption also applies to stabilisers and preservatives in the enzyme raw material. This is because enzymes are proteins and therefore readily biodegradable. Proteases are also unstable due to self-hydrolysis. Preservatives and stabilisers are therefore needed to keep enzymes stable until they are used.

Micro-organisms

Micro-organisms can be sensitising and the use of micro-organisms must be handled with caution. Nordic Ecolabelling has chosen to exempt micro-organisms from the requirement concerning sensitising substances in the same way enzymes are exempt. All added micro-organisms still must comply with conditions in requirement O11 Micro-organisms.

Fragrances

Fragrances have a separate requirement regarding allergenic content. Excluding all allergens from fragrances makes it almost impossible to produce a fragrance. Nordic Ecolabelling has, however, chosen to exclude fragrances from professional foam/spray products. Allergenic fragrances are also more restricted in foam/spray for consumers than in concentrated products, since the exposure described above is different for foam/sprays than for concentrated products. See requirement O9.

Preservatives

Preservatives are needed to ensure the quality and stability of the product. Restrictions on sensitizing preservatives are found in requirements O6 Excluded substances and O10 Preservatives.

## O6 Excluded substances

The following substances or substance groups must not be present as ingoing substances in the cleaning product.

- Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), butylated hydroxytoluene (BHT, CAS No. 128-37-0), alkylphenol ethoxylates (APEOs) and other alkylphenol derivates (APD))
- Aminopolyphosphonates
- Amphoacetates (EC No. 271-792-5, 271-794-6, 931-291-0, 938-645-3, 942-589-5, 943-154-2, 944-415-3, 946-565-5, 947-998-2)
- Aromatic solvents and carriers, incl. chlorotoluenes, chlorophenols and chlorobenzenes

*Solvents as defined in Directive 1999/13/EC: Organic substances with a vapour pressure of at least 0.01 kPa at 20 °C*

- Benzalkonium chloride (CAS No. 8001-54-5)
- Bisphenols and bisphenol derivatives, defined as 34 bisphenols identified by ECHA[4] for further EU regulatory risk management due to known or potential endocrine disruption or reproductive toxicity.
- Boric acid, borates, and perborates
- Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts
- Halogenated organic compounds
- Isothiazolinones (e.g. methylisothiazolinone (MIT), CAS No. 2682-20-4, metylchloroisothiazolinone (CMIT), C(M)IT/MIT (3:1), CAS No. 55965-84-9, CAS No. 26172-55-4, benzisothiazolinone (BIT), CAS No. 2634-33-5, octylisothiazolinone (OIT), CAS No. 26530-20-1 and dichlorooctylisothiazolinone (DCOIT), CAS No. 64359-81-5)
- Linear alkylbenzene sulphonates (LAS)
- Methyldibromo glutaronitrile (MG), CAS no. 35691-65-7
- Nanomaterials/-particles
- Nitro musks and polycyclic musk compounds
- NTA (nitrilo triacetic acid, CAS-no. 139-13-9), and its salts

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

[4] EC/List No. 201-245-8 (BPA), 201-025-1 (BPB), 401-720-1 (4,4'-Isobutylethylidenediphenol), 216-036-7 (BPAF) and its 8 salts (278-305-5; 425-060-9; 443-330-4; 468-740-0; 469-080-6; 479-100-5; 943-265-6; 947-368-7), 201-250-5 (BPS), 201-240-0 (BPC), 204-279-1 (TBMD), 201-618-5 (6,6'-di-tert-butyl-4,4'-butylidenedi-m-cresol), 242-895-2, 248-607-1, 405-520-5 (D8), 217-121-1 (DAB), 227-033-5 (TMBPA), 210-658-2 (BPF), 411-570-9, 277-962-5 (contains BPS, 500-086-4 (contains BPA), 500-263-6 (contains BPA), 500-607-5 (contains BPA), 701-362-9, 904-653-0 (contains BPA), 908-912-9 (contains BPF), 926-571-4 (contains BPA), 931-252-8 (contains BPA), 941-992-3 (contains BPS), 943-503-9 (contains BPA).
[1] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed https://echa.europa.eu/documents/10162/5e60f2fe-12d0-7f6b-5868-f199cfd7f984

- Organic chlorine compounds, hypochlorites and hypochlorous acid
- PBT and vPvB as defined in REACH Annex XIII, including those under ECHA PBT assessment https://echa.europa.eu/da/pbt
- Per- and polyfluoroalkyl substances (PFAS)

*PFAS is defined as any substance that contains at least one fully fluorinated methyl ($CF_3$-) or methylene (-$CF_2$-) carbon atom (without any H/Cl/Br/I attached to it).*

- Phosphate, phosphonate, phosphonic acid and phosphoric acid
- Phthalates
- Potential or identified endocrine disruptors, listed in any of the following "Endocrine Disruptor Lists" List I; II and III

*Note: Substances moved to "Substances no longer on list" and not present on Lists I-III, are no longer excluded, except for those on sublist II where concern remains. Nordic Ecolabelling will assess these on a case-by-case basis.*

- Quaternary ammonium compounds, which are not readily aerobic biodegradable such as DTDMAC (CAS No. 61789-80-8), DSDMAC (CAS No. 107-64-2), DHTDMAC (CAS No. 61789-72-8) and DADMAC (CAS No. 7398-69-8).

*Aerobic biodegradable according to OECD test method 301 (A-F) or 310 or equivalent methods evaluated by an independent body and controlled by Nordic Ecolabelling.*

- Siloxanes
- Silver, colloidal silver and nanosilver
- Substances on the REACH Candidate list of SVHC substances https://www.echa.europa.eu/candidate-list-table
- Volatile organic compounds (VOC)

*Volatile organic compounds are defined in accordance with the European Commission's directive 1999/13/EC on the limitation of emissions of volatile organic compounds with steam pressure > 0.01 kPa at 20°C.*

*Exemption for acetic acid, isopropanol, ethanol, and solvents in fragrances.*

☐ Appendix 1 or equivalent, completed and signed.

☐ Appendix 2 or equivalent, completed and signed by all raw material manufacturers/suppliers.

### Background to requirement O6

Certain problematic substances and substance groups are difficult to exclude through general chemical requirements. To address this, Nordic Ecolabelling has compiled a list of substances that must not be present as ingoing substances in the ecolabelled cleaning product.

The purpose of this list is to prohibit substances that may not be excluded by other requirements but are associated with environmental and health hazards. Some substances are included for clarity, even if they are already prohibited under other requirements.

This is a standard requirement, based on the precautionary principle and is only partially tailored to the specific product group. The requirement is intended to exclude problematic substances that are not necessarily found in products on the market today.

The requirements have been amended compared with generation 6.

*Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), butylated hydroxytoluene (BHT, CAS No. 128-37-0), alkylphenol ethoxylates (APEO) and other alkylphenol derivates (APD))*

The non-ionic APEO group of surfactants are produced in large volumes and their uses lead to widespread release to the aquatic environment. APEOs are highly toxic to aquatic organisms and degrade to more environmentally persistent compounds (APDs). Ethoxylated nonylphenol and several other alkylphenols are included in the Candidate List due to endocrine disrupting properties. Nordic Ecolabelling also bans APEO/APD compounds through the biodegradability requirement in O8 Surfactants.

*Aminopolyphosphonates*

Aminopolyphosphonates are for example used in laundry detergents. An analysis hypothesize that glyphosate may also be a transformation product of aminopolyphosphonates. Glyphosate is suspected of causing genetic damage. Glyphosate is acutely toxic to fish and birds and can kill beneficial insects and soil organisms that maintain ecological balance. Laboratory studies have identified adverse effects of glyphosate-containing products in all standard categories of toxicological testing[5].

*Amphoacetates (EC No. 271-792-5, 271-794-6, 931-291-0, 938-645-3, 942-589-5, 943-154-2, 944-415-3, 946-565-5, 947-998-2)*

The group consists of 9 amphoacetates, that are used as surfactants in consumer products like detergents and cosmetic products. Based on the potential for widespread use and available information on potential reproductive toxicity (Repro. 1B), these amphoacetates were identified in need for further regulatory risk management in EU.[6]

*Aromatic solvents* and carriers, incl. chlorotoluenes, chlorophenols and chlorobenzenes*

Aromatic solvents, including substances like benzene, toluene, xylenes, chlorobenzenes, chlorotoluenes, and chlorophenols, are used for their strong solvency but pose serious health and environmental risks. They can cause neurological, reproductive, and organ toxicity, and some are carcinogenic. Many are persistent in the environment, toxic to aquatic life, and contribute to air pollution.

*Benzalkonium chloride (CAS No. 8001-54-5)*

Benzalkonium chlorides (BACs) is part of a group of chemicals with wide applications due to their antimicrobial properties against bacteria, fungi and viruses. There is a risk that frequent and widespread use of BACs in commercial products can generate selective environments for microbes and contribute to resistance to antibiotics. Furthermore, there is a risk to consumer exposure due to their toxicity and allergenic properties.

[5] M. Schwientek, H. Rügner, S.B. Haderlein, W. Schulz, B. Wimmer, L. Engelbart, S. Bieger, C. Huhn, Glyphosate contamination in European rivers not from herbicide application, Water Research, Volume 263, 2024,122140, ISSN 0043-1354, https://doi.org/10.1016/j.watres.2024.122140. (https://www.sciencedirect.com/science/article/pii/S004313542401039X)

[6] ECHA group assessment of Amphoacetate and amphopropionate derivatives of N-hydroxyethylimidazolines: https://echa.europa.eu/documents/10162/bfd90551-19c6-41ab-b608-a00147d7db8a

*Bisphenols and bisphenol derivatives*

Several bisphenols with the general bisphenol structure and 'bisphenol derivatives' which have constituents with structural properties common to bisphenols are now prohibited. Based on the potential for widespread use and available information on potential endocrine disruptors, reproductive toxicity and PBT/vPvB properties, 34 substances were identified in need for further regulatory risk management in EU.[7]

*Boric acid, borates and perborates*

Boric acid, borates and perborates have many uses, such as stain removal, oxidizing and bleaching agents and are often used to produce laundry detergents and can be used in industrial cleaners. They are classified as toxic to reproduction and poses a risk to consumers.

*Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts*

Ethylenediaminetetraacetic acid (EDTA), diethylenetriamine pentaacetate (DTPA) and their salts are not readily degradable. Furthermore, DTPA is classified toxic for reproduction and may potentially pose a risk to consumers. For EDTA, the EU's risk assessment states that under the conditions at municipal water treatment plants EDTA is either not broken down or only breaks down to a slight degree. To-date in Europe, EDTA has been replaced in virtually all consumer products by readily biodegradable alternatives such as MGDA (methylglycine diacetic acid) and GLDA (glutamic acid diacetic acid).

*Halogenated organic compounds*

Halogenated organic compounds, including short-chain chlorinated paraffins (C10-C13), medium-chain chlorinated paraffins (C14-C17), chlorophenols and dimethyl fumarate derivates, is a large group of substances that are harmful to both the environment and human health. They are often carcinogenic, highly toxic to aquatic organisms and very persistent to degradation.

*Isothiazolinones (e.g. methylisothiazolinone (MIT), CAS No. 2682-20-4, metylchloroisothiazolinone (CMIT), C(M)IT/MIT (3:1), CAS No. 55965-84-9, CAS No. 26172-55-4, benzisothiazolinone (BIT), CAS No. 2634-33-5, octylisothiazolinone (OIT), CAS No. 26530-20-1 and dichlorooctylisothiazolinone (DCOIT), CAS No. 64359-81-5)*

Allergies to preservatives, particularly MI (CAS no. 2682-20-4) have risen in recent years and Nordic Ecolabelling does not want to contribute towards unnecessary exposure. Due to the considerable sensitising potential and a desire from end users to avoid MI, Nordic Ecolabelling has chosen to prohibit its use in Nordic Swan Ecolabelled products.

While there was previously an exemption for wash polish/wax-and-wash care products allowing up to 15 ppm MI in the final product, this exemption was deemed no longer relevant and has been removed in criteria generation 7.

*Linear alkylbenzene sulphonates (LAS)*

LAS is a major anionic surfactant with important applications within household detergents and industrial cleaning agents. LAS is relatively rapidly aerobically degraded, but only very

[7] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed https://echa.europa.eu/documents/10162/5e60f2fe-12d0-7f6b-5868-f199cfd7f984

slowly or not at all degraded under anaerobic conditions. Therefore, LAS is mostly found in very high concentrations in sewage sludge and enters the soil compartment as a result of sludge application. Nordic Ecolabelling also bans LAS through the biodegradability requirement in O8 Surfactants.

*Methyldibromo glutaronitrile (MG, CAS No. 35691-65-7)*

Methyldibromo glutaronitrile (MDBGN) has applications within cosmetics and industrial products and is a bromine-containing preservative. MDBGN has been shown to be a sensitizer and cause for allergic contact dermatitis and is therefore banned.

*Nanomaterials/-particles*
Nanomaterials[8] are a diverse group of materials under the size of 100 nm. Due to their small size and large surface area nanoparticles are often more reactive and may have other properties compared to larger particles of the same material. Further, different sizes, shapes, surface modifications and coatings can also change their physical and chemical properties. Nanoparticles can cross biological membranes and thus be taken up by cells and organs. One of the main concerns are linked to free nanoparticles, as some of these – when inhaled – can reach deep into the lungs, where the uptake into the blood is more likely.

There is concern among public authorities, scientists, environmental organisations, and others about the insufficient knowledge regarding the potential detrimental effects on health and the environment.[9],[10],[11] Nordic Ecolabelling take these concerns seriously and apply the precautionary principle to exclude potentially hazardous nanomaterials from products.

Nanotechnology, which also includes nanoparticles, is used in many product areas, including those for which Nordic Ecolabelling has criteria. The greatest cause for concern is the use of nanoparticles, which can be released and thereby affect health and the environment. There is concern among public authorities, environmental organisations and others about the lack of knowledge regarding the potential detrimental effects on health and the environment.

*Nitro musks and polycyclic musk compounds*

Nitro musks and polycyclic musk generally have undesirable properties regarding both health and the environment. Some such compounds are already excluded from use via the requirement concerning CMR substances.

*NTA (nitrilo triacetic acid), CAS No. 139-13-9, and its salts*

NTA is an anthropogenic substance and does not naturally occur in the environment and is present in the environment as a result of its release in sewage from processing. NTA is considered to be persistent and is suspected carcinogenic.

[8] Nordic Swan Ecolabel webtext: https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-and-microplastics/nanomaterials/
[9] UNEP (2017) Frontiers 2017 Emerging Issues of Environmental Concern. United Nations Environment Programme, Nairobi. https://wedocs.unep.org/bitstream/handle/20.500.11822/22255/Frontiers_2017_EN.pdf
[10] Parliamentary Assembly of the Council of Europe (2013) Nanotechnology: balancing benefits and risks to public health and the environment.
http://assembly.coe.int/CommitteeDocs/2013/Asocdocinf03_2013.pdf
[11] SCCS (Scientific Committee on Consumer Safety) (2019) Guidance on the Safety Assessment of Nanomaterials in Cosmetics. SCCS/1611/19.
https://ec.europa.eu/health/sites/health/files/scientific_committees/consumer_safety/docs/sccs_o_233.pdf

*Organic chlorine compounds, hypochlorite and hypochlorous acid*

Organic chlorine compounds, hypochlorites and hypochlorous acid are sometimes used as disinfecting and antibacterial substances and as bleaching agents. Organic chlorine compounds can be, or lead to the formation of, toxic and bioaccumulative substances that are difficult to break down. Chlorine-based bleaching agents generally have undesirable health and environmental properties. Hypochlorous acid is not classified, and hypochlorites have the classification Acute toxicity (H400) and thus, they are not covered by the general requirement concerning environmentally hazardous substances. However, both pose an environmental risk due to the possibility of organic chlorine compounds forming. Mixing these ingredients with an acid (e.g., acidic cleaning products) leads to formation of toxic chlorine vapour, which is an additional concern due to the ingredients' use in consumer cleaning products.[12]

*PBT and vPvB substances in accordance with REACH Annex XIII*

PBT and vPvB are abbreviations for substances that are persistent, bioaccumulative and toxic, and very persistent and very bioaccumulative, respectively, in accordance with REACH Annex XIII. This means that they are not biodegradable and that they accumulate in living organisms. Based on these adverse characteristics they pose a threat to the environment and human health. They are prohibited in all Nordic Swan Ecolabel products.

*Per- and polyfluoroalkyl substances (PFAS)*

Per- and polyfluoroalkyl substances (PFAS) are used in many types of products due to their water and dirt repellent properties. These compounds constitute a group of substances that have highly problematic intrinsic hazardous properties. They are extremely persistent and accumulate in the body. They are spread all over the globe, from the large oceans to the Arctic, and are found in e.g. wild birds and fish and their eggs. Also, shorter chain compounds (2–6 carbon atoms) have been discovered in nature. The substances in this group are suspected to be endocrine disruptors, carcinogenic and to have a negative impact on the human immune system.

*Phosphate, phosphonate, phosphonic acid and phosphoric acid*

Plants, animals, and people all depend on phosphorus to grow. Phosphorus (a constituent element of phosphate, phosphonate, phosphonic acid and phosphoric acid) is, amongst other things, an essential ingredient in artificial fertilizer, which in turn is fundamental in making it possible to feed over 8 billion people on the planet. Phosphorus is a non-renewable resource, facing ever-increasing demand, that can only be extracted from phosphorite, and this is only found in a few countries, several of which have unstable regimes. Since there are alternatives available, Nordic Ecolabelling prohibit the use of phosphate, phosphonate, phosphonic acid and phosphoric acid.

There is no longer any exemption for wash polish/wax-and-wash products since it was no longer deemed necessary.

[12] LOUS, 2009: List of adverse substances 2009. Information from the Danish Environmental Protection Agency no. 3 2010 http://www2.mst.dk/udgiv/publikationer/2010/978-87-92617-15-6/pdf/978-87-92617- 16-3.pdf

*Phthalates*

Some phthalates are identified as endocrine disruptors and some of them are classified as reprotoxic. For these reasons several phthalates are included in the Candidate list.

Based on their hazardous properties, phthalates pose a threat to the environment and human health and there is a ban on this group of substances.

*Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III*

Endocrine disruptors (EDs) are chemicals that alter the functioning of the endocrine (hormone) system and consequently cause adverse health effects. The term potential EDs is used for chemicals with properties that make them suspected to be EDs. The hormone system regulates many vital processes in living organisms and when normal signalling is disturbed, adverse effects may result. EDs raise high concern for their risk of causing serious negative impact on the environment as well as on human health specifically. Special concern is raised for effects on reproduction and development and about possible links to increases in public health diseases. While effects in wildlife populations have been confirmed, evidence is pointing to effects also in humans.

*Quaternary ammonium compounds, which are not aerobically or anaerobically biodegradable* such as DTDMAC (CAS No. 68783-78-8), DSDMAC (CAS No. 107-64-7), DHTDMAC (CAS No. 61789-80-8) and DADMAC (CAS No. 7398-69-8)*

Quaternary ammonium compounds (QACs) are usually surface-active agents where some of them precipitate or denature proteins and destroy micro-organisms. QACs are toxic to many aquatic organisms including fish, daphnids, algae, rotifer and microorganisms employed in wastewater treatment systems.

*Siloxanes*

Commonly used siloxanes are the cyclic siloxanes cyclotetrasiloxane (D4), cyclopentasiloxane (D5) and cyclohexasiloxane (D6) and the linear polydimethylsiloxane (PDMS) also known as dimethicone. The cyclic siloxanes D4, D5 and D6 are toxic to human health and the environment having PBT and/or vPvB properties, whereas dimethicone is not considered toxic or bioaccumulative. However, there is a concern that over time, dimethicone will slowly degrade into smaller units exerting the same properties as the cyclic siloxanes. Therefore, the use of both cyclic and linear siloxanes is prohibited.

*Silver, colloidal silver and nanosilver*

Silver is antibacterial agent used in various consumer products, typically in nano form, where it has a greater effect per total amount of silver. Silver is hazardous to health with since it is classified as reprotoxic and under assessment for endocrine disruptive properties. In addition, silver is extremely hazardous to the environment, classified H400 and H410 with an M factor of 10-1000 depending on particle size.

*Substances on the REACH Candidate list of SVHC*

The Candidate List identifies substances of very high concern which fulfil the criteria in article 57 of the REACH Regulation (EC 1907/2006). The list includes carcinogenic; mutagenic; and reprotoxic substances (CMR, categories 1A and 1B in accordance with the CLP Regulation); and PBT (persistent, bioaccumulative and toxic) and vPvB (very persistent

and very bioaccumulative) substances (as defined in REACH Annex XIII). In addition, two more substance groups are included if they are of equivalent level of concern (ELoC) as the ones previously mentioned. These are endocrine disruptors and substances which are environmentally hazardous without fulfilling the requirements for PBT or vPvB. Based on these adverse characteristics, Nordic Ecolabelling prohibits substances on the Candidate List. This means that we act ahead of the legislation and ban the substances before they are subject to authorisation and restriction in accordance with REACH.

*Volatile organic compounds (VOC)*

Volatile organic compounds are undesirable, since they are typically harmful to health, often non-readily biodegradable in an aquatic environment and can have negative effects on the ozone layer.

VOCs (Volatile organic compounds) are defined under 1999/13/EC as substances that at 20°C have a vapour pressure > 0.010 kPa.

Nordic Ecolabelling exempts acetic acid, isopropanol, and ethanol, and solvents in fragrances from this requirement. Occupational hygiene limits have been compared for ethanol and isopropanol compared to other solvents. The limits between different VOCs are large. The short time limit for ethanol (mg/m3) is for example 50 times higher than for formaldehyde. To reach the limit for acetic acid, ethanol, and isopropanol several bottles of cleaners would be needed to be used in a room during a workday.

In May 2019 it was decided to exempt fragrances from exclusion of VOC since it was never intention to ban the use of fragrances through this requirement.

## O7 Microplastics

Microplastics* must not be present as ingoing substances in the cleaning product and must not be added to the product during manufacturing.

Nordic Ecolabelling has updated the definition of microplastics by adopting the EU definition in the REACH restriction on synthetic polymer microparticles, which entered into force on 17 October 2023. The new definition shall be used.

** Microplastics are synthetic polymer microparticles as defined in REACH Regulation ((EC) No 1907/2006), Annex XVII, Entry no. 78: Synthetic polymer microparticles: polymers that are solid, and which fulfil both of the following conditions:*

*a) are contained in particles and constitute at least 1% by weight of those particles; or build a continuous surface coating on particles.*

*b) at least 1% by weight of the particles referred to in point (a) fulfil either of the following conditions:*

*1. all dimensions of the particles are equal to or less than 5 mm.*

*2. the length of the particles is equal to or less than 15 mm and their length to diameter ratio is greater than 3.*

*The following polymers are excluded from this designation:*

- *polymers that are the result of a polymerisation process that has taken place in nature, independently of the process through which they have been extracted, which are not chemically modified substances.*

- *polymers that are biodegradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].*
- *polymers that have a solubility greater than 2g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].*
- *polymers that do not contain carbon atoms in their chemical structure.*

*N.B. The following "Conditions of restriction" paragraphs apply: 1 (concentration limit in mixtures), 2 (definitions), 3 (particle size limits). The remaining points do not apply, e.g. 4 (Paragraph 1 shall not apply to the placing on the market of:), e.g. 4(a) "synthetic polymer microparticles, as substances on their own or in mixtures, for use at industrial sites", 5 (derogations), e.g. 5 (b) "synthetic polymer microparticles the physical properties of which are permanently modified during intended end use in such a way that the polymer no longer falls within the scope of this entry".*

- Appendix 1 or equivalent declaration completed and signed.
- Appendix 2 or equivalent declaration completed and signed by all raw material manufacturers/suppliers.

**Background to requirement O7**

Microplastics[13] are very small fragments of plastic material. They can be harmful to health and the environment due to their size, surface properties, resistance to degradation and because they can carry harmful chemicals. In nature, microplastics come from pellets, paint, tires, textiles, personal care products and various plastic items. They have been found all over the world, at sea, in freshwater, sediments, sludge from wastewater treatment plants and agricultural soil. Microplastics have been detected in various aquatic organisms across the food chain, from zooplankton to vertebrates and in human tissues and organs such as blood and placenta. The Nordic Swan Ecolabel uses the precautionary principle and strives to limit the use and release of microplastics wherever possible.

## O8 Surfactants - aerobically and anaerobically biodegradable

All surfactants in the cleaning product, irrespective of their function in the product must be readily aerobically biodegradable* and anaerobically biodegradable*.

** In accordance with the DID-list "Detergents Ingredients Database" version 2023 or later, see Appendix 3 for further details. For substances not on the DID-list, or substances where biodegradation data is missing on the DID-list, the parameters must be calculated based on the guidance in part B of the DID-list and associated documentation must be presented.*

- Documentation showing that the requirement is fulfilled. Nordic Ecolabelling's calculation sheet can be used which is obtained from Nordic Ecolabelling's websites.

[13] https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-and-microplastics/microplastics/

**Background to requirement O8**

Surfactants are widely used in cleaning products and constitute a large proportion of the ingredients in such products. As cleaners are also used in places that lack connection to waste water treatment and go straight into nature it is relevant to set requirements on biodegradability of surfactants.

Compounds that accumulate in the environment can pose a risk both now and in the future if they are acutely toxic. Knowledge of the long-term effects of non-readily biodegradable substances is often in short supply. Rapid biodegradability under oxygen-rich (aerobic) and oxygen-poor (anaerobic) conditions is therefore of major environmental importance. Surfactants are essential in this context, since they are a group of organic substances that appear in large quantities, and since many surfactants are toxic to aquatic organisms.

The EU Detergent Regulation (EC) No 648/2004 prescribes that surfactants must be aerobically biodegradable, but there are opportunities for exemptions from the regulation for products for professional use. Since the possibility exists, we believe it is appropriate to retain the requirement of aerobic biodegradability of surfactants. Nordic Ecolabelling therefore requires surfactants (irrespective of function) to be biodegradable in both aerobic and anaerobic conditions for this product group.

Examples of surfactants that are not sufficiently biodegradable to clear this requirement include linear alkylbenzene sulphonate (LAS) and alkylphenol ethoxylates (APEO)/ alkylphenol derivatives (APD).

LAS is toxic to aquatic organisms and not anaerobically biodegradable. Therefore, LAS is excluded from use as a surfactant. LAS is also excluded in requirement O6.

APEO and/or APD are a group of non-readily biodegradable surfactants that are proven endocrine disruptors. Legislation has prompted these substances to be phased in most products. They are excluded in this requirement and requirement O6.

## O9 Fragrances

All fragrance substances in the cleaning product, including fragrance substances in plant extracts, must live up to the following requirements:

- Fragrances must be in line with the International Fragrance Association (IFRA) guidelines. The IFRA guidelines can be read at https://ifrafragrance.org/docs/default-source/51st-amendment/ifra-51st-amendment---guidance-for-the-use-of-ifra-standards.pdf?sfvrsn=79750005_2
- Substances with the hazard statement H317 and/or H334 or fragrance allergens listed in Annex III of the Cosmetic Regulation may be included in concentrations <0.0100% (100 ppm).
- The following substances are prohibited:
  - oak moss extract (Evernia prunastri, CAS No. 90028-68-5)
  - tree moss extract (Evernia furfuracea, CAS 90028-67-4)
- Fragrances must not be present in wash polish/wax-and-wash-products.
- Fragrances must not be present in professional* foam/spray cleaning products or their refills.

- For foam/spray products for consumers* substances with the hazard statement H317 and/or H334 or fragrance allergens listed in Annex III of the Cosmetic Regulation may be included in concentrations <0.0050% (50 ppm).
- For mix-it-yourself refills for foam/spray products for consumers* substances with the hazard statement H317 and/or H334 or fragrance allergens listed in Annex III of the Cosmetic Regulation may be included in concentrations <0.050% (500 ppm) on condition that the stated dilution gives a concentration in the diluted product of <0.0050% by weight (50 ppm).

**See definitions for "Consumer products," "Professional products," and "Products for both professionals and consumers" in the Definition Table.*

- ☐ Appendix 1 or equivalent declaration completed and signed
- ☐ Appendix 2 or equivalent declaration completed and signed by all relevant raw material manufacturers/suppliers.
- ☐ Fragrance allergens list.

### Background to requirement O9

Fragrances are a group of constituent substances that do not generally have a cleaning effect in the product, and at the same time they contain substances with negative health aspects, particularly allergens, as well as negative environmental effects, since they are usually not readily biodegradable and they tend to be classified as hazardous to the environment.

However, fragranced cleaning products hold a substantial market share. Nordic Ecolabelling therefore believes that a total ban on fragrances would make Nordic Swan Ecolabelled cleaning products considerably less widespread in the market. In addition to this requirement, requirements concerning environmentally hazardous substances, non-degradable substances and CDV are considered to limit the concentration of fragrances in products and encourage fragrances with a better environmental profile.

International Fragrance Association (IFRA) represents the fragrance industry. The association conducts safety assessments of fragrance substances and provide public standards/guidelines for the use of these. The requirement for compliance with IFRA's guidelines[14] ensures that the manufacture, handling, and use of fragrances in the products meets specific standards in terms of prohibited substances, restricted use, and purity. IFRA's guidelines support the industry in offering products that are safe for consumers and for the environment. The guidelines apply to the manufacture and handling of all fragrance materials for all applications and contain the complete IFRA standards.

In 2023, the Cosmetic Regulation added 56 fragrance substances that must be declared on the packaging of cosmetic products, leading to a total of 80 substances that are subjected to declaration[15]. These substances are adopted from the EU Scientific Committee on Consumer Safety (SCCS) opinion on fragrance allergens in cosmetic products from June 2012[16]. SCCS refrains from recommending maximum limits for the content of the fragrance

[14] Guidance for the use of IFRA Standards, The International Fragrance Association, 2023
[15] Regulation (EC) No 1223/2009, 2009.
[16] SCCS (Scientific Committee on Consumer Safety), opinion on fragrance allergens in cosmetic products, 26-27 June 2012

substances in cosmetic products but however states that the general limit of 100 ppm is tolerated by most consumers and wishes to guard against the development of new allergy sufferers both within generally tolerant and sensitive people. This limit is therefore also set in the requirement for fragrance allergens in cleaning products.

Nordic Ecolabelling do not distinguish between fragrance substances that are subject to declaration and fragrance substances that meet the classification H317 (may cause sensitisation by skin contact) or H334 (may cause allergy or asthma symptoms or breathing difficulties if inhaled), therefore the requirement includes all these substances.

SCCS recommends that chloroatranol and atranol are not included in cosmetic products. Nordic Ecolabelling therefore consider it relevant to also prohibit their presence in cleaning products. These two are the main components of oak moss extract (Evernia prunastri, CAS No. 90028-68-5) and tree moss extract (Evernia furfuracea, CAS No. 90028-67-4).

Nordic Ecolabelling finds that there is a strong justification for excluding fragrances from professional foam/spray products since cleaning personnel can be exposed frequently to the substances in the foam/spray products. Professional cleaning personnel are usually not able to choose whether the product contains fragrance and are likely to be exposed to fragrances involuntarily. The exposure can be direct contact with the skin or in the form of foam/sprays that create an aerosol during use.

Even for consumers, Nordic Ecolabelling sets stricter requirements for products sold in foam/spray bottles, since when using a foam/spray product, there is a greater risk of breathing in allergenic substances. Although respiratory aerosols are reduced using foam nozzles, Nordic Ecolabelling has chosen to use precautionary principle when setting the limit. See also requirement O21 regarding foam/spray nozzles.

The Nordic Ecolabel prohibits fragrances in wash polish/wax and wash care products. This product type is for large floor surfaces where it can lead to unwanted exposure of the cleaning staff and building occupants, which Nordic Ecolabelling wants to limit.

## O10 Preservatives

a) Preservatives included in the product or constituent substances must not be bioaccumulative. Preservatives are judged not to be bioaccumulative if BCF < 100 or logKow < 3. If both values are available, the value for the highest measured BCF is to be used, see 0.

b) Sensitising preservatives are permitted to a maximum of 100 ppm. Note that requirement O2 and O5 must also be fulfilled.

Note that isothiazolinones are forbidden in the products in requirement O6.

In mix-it-yourself RTU products, sensitizing preservatives may be present in concentrations up to 0.0100% by weight (100 ppm) in the diluted final product. Note, however, that requirement O2 (including prohibition of products classified H317 or H334) apply to these refills in concentrated form.

a) Documentation of BCF or logKow, Appendix 1 and 2 or similar documentation completed and signed and safety data sheet for the preservative.

b) Calculation of the amount of ingoing sensitising preservatives in the final product

**Background to requirement O10**

Preservatives are added to liquid products to prevent bacterial growth in the products. Cleaning products usually need to be preserved and do not have self-preserving properties to the same extent as liquid laundry detergents, for example, so there is a need to add preservatives to cleaning products. Nevertheless, since preservatives are generally toxic to aquatic organisms and can cause hypersensitivity and allergies, Nordic Ecolabelling wishes to limit preservatives via a requirement that they must not be bioaccumulative and that the levels must be optimised. Sensitising preservatives are also restricted.

a) Preservatives may be used in the products and in constituent substances only if they are not bioaccumulative. Bioaccumulative substances collect in the fatty tissue of living organisms and can cause long-lasting damage to the environment.

Unless otherwise proven, substances are bioaccumulative if logKow ≥ 3.0 under the OECD's guidelines 107 or 117, or equivalent. Such a substance may be tested on fish in line with the OECD's testing instructions 305 A–E. If the substance has a biological concentration factor (BCF) ≥ 100 the substance is bioaccumulative, and if the BCF < 100 the substance is considered not to be bioaccumulative. If there is a measured BCF value, the highest measured BCF is always the determining factor in the assessment of a substance's bioaccumulative potential.

The requirement ensures that licence holders do not begin using undesirable preservatives that can enter the ecosystem.

b) Since allergies to preservatives have risen in recent years[17] and Nordic Ecolabelling does not want to contribute towards unnecessary exposure, Nordic Ecolabelling has also chosen to restrict other sensitising preservatives, alongside the ban on isothiazolinones, see O6.

In cases where Nordic Ecolabelling has chosen to allow sensitising preservatives, they are permitted in quantities that do not trigger the labelling of the cleaning product with the warning "Contains xxx, may cause an allergic reaction" (see requirement O2). A limit of 100 ppm has also been set.

## O11 Micro-organisms

Please see Appendix 8 for a proposed new version of the Micro-organisms requirement. The text written below is the Micro-organisms requirement valid for generation 6. We welcome input on both versions during the consultation as well as the question of whether to allow consumer products containing micro-organisms.

a) Products containing microorganisms to be eligible for Nordic Swan Ecolabelling are professional cleaning products for indoor use (within the product group definition). See also O5 which excludes microorganisms in spray products.

b) Only microorganisms that fulfil the following requirements may be included in the cleaning product:

- The microorganisms are found in Risk group 1 in Directive 2000/54/CE.
- It must be controlled, that the product is not contaminated with pathogen microorganisms

[17] (Svedman, ym., 2012), (SCCS, 2013)

- The microorganisms must not contain any of the following pathogen species when screened using the following or equivalent test methods:
  - E. Coli, test method ISO 16649-3:2015
  - Streptococcus (Enterococcus), test method ISO 21528-1:2004
  - Staphylococcus aureus, test method ISO 6888-1
  - Bacillus cereus, test method ISO 7932:2005 or ISO 21871:2006
  - Salmonella, test method ISO6579:2002 or ISO 19250
- The microorganisms' DNA is identified according to a "Strain identification protocol" (using the 16S ribosomal DNA sequencing or other equivalent methods).
- Are not resistant to the following types of antibiotics according to EUCAST or Nordic AST or other equivalent method:
  - Aminoglycosides
  - Macrolides
  - Beta lactam
  - Tetracyclines
  - Fluoroquinolones or other quinolones
- Microorganisms must not be GMO.
- Colony forming units (CFU) > 1,0 x 105 microorganisms per ml in-use solution.
- The products must on their labels/product information sheet or in other marketing material provide the user with the following information:
  - That the product contains microorganisms
  - Instruction saying that the products shall not be used on surfaces in contact with food.
  - That the products shall not be used with spray application
- Products containing microorganisms shall display superior cleaning performance beyond the general cleaning requirements of R15 and R16. It must be demonstrated that the cleaning product can degrade the following:
  - Protein: degradation of proteins shown as degradation on standard casein agar medium or through other scientifically acknowledged medium displaying protein degradation.
  - Starch: degradation of starch shown as degradation on standard starch agar or through other scientifically acknowledged medium displaying starch degradation.
  - Fat and/or vegetable oil: degradation shown as degradation on "Spirit Blue"-agar medium or through other scientifically acknowledged medium.
- Shelf-life: show that the microorganisms have a good stability by performing a stability test at room temperature showing that the microorganisms not decrease more than 20% alternatively decrease at < 1log per year according to ISO 4833-1:2014 (Horizontal method for the enumeration of microorganisms) or through other scientifically acknowledged method to count the number of microorganisms.

Analysis shall be performed by a laboratory fulfilling the requirements of Appendix 3.

*Note that products containing microorganisms sold in Norway have to fulfil the national legislation "FOR 1998-01-22 nr 93" and that they must also be listed on www.pib.no. In addition to that "FOR 2004-06-01 nr 931" must be fulfilled when relevant.*

- Documentation demonstrating that the microorganisms are classified as Risk Group 1.
- Documentation describing how it is controlled that the products is not contaminated with pathogen microorganisms
- Test results demonstrating the the microorganisms does not contain the following pathogen species: E. Coli, Streptococcus (Enterococcus), Staphylococcus aureus, Bacillus cereus, and Salmonella.
- Documented DNA identification.
- Test results demonstrating that the microorganisms are not resistant to antibiotics, do not include the aforementioned pathogenic strains and are not GMO.
- Documentation of colony forming units per ml in-use solution.
- Performance test demonstrating that the product can degrade protein, start, fat and oil.
- Product label and marketing material showing that that product is designed for professional use, application method and that the above-mentioned requirement regarding information on the label is present.
- Stability study showing shelf life according to the requirement above.

**Background to requirement O11**

The microorganisms used in cleaning products are living microorganisms. They are primarily used in product for professional use for cleaning floors, sanitary areas and drains. Microorganisms are used in cleaning products since they extend the duration of the cleaning effect of the product and enable the product to continue to perform even post cleaning. Nordic Ecolabelling criteria for cleaning products do not cover drain cleaners and also do not cover products containing microorganisms for outdoor use. The reason is that the consequences and impact of the microorganisms on the external and aquatic environment, when being discharged directly into nature is unknown.

Briefly, microorganisms are found in nature in the form of spores. These spores develop into active microorganisms in contact with organic material which they eat/decompose. This decomposition continues until there is no organic material remains. Some of the microorganisms then die and some return to spores. When new organic material is available, the microorganisms once again become active. The function of microorganisms in cleaning products is to decompose organic material on the surface that is being cleaned. For example, this could be fats and proteins on a floor surface (personal correspondence with Innu Science and Novozymes). Decomposition continues until there is no more organic material to decompose. Some microorganisms return to spores and are reactivated when new organic material becomes available while some die. It is therefore necessary to add new microorganisms periodically to continue this decomposition (personal correspondence with Innu Science and Novozymes).

Cleaning products with microorganisms also contain other ingredients such as surfactants. Surfactants are necessary since there is a delay before the microorganisms take effect. Surfactants provide an immediate cleaning effect alongside mechanical cleaning. After that,

the microorganisms take effect and decomposition products form on the surface and can be wiped off.

The primary advantage of products containing microorganisms is that the surface remains clean longer. They are also effective on surfaces that can otherwise be difficult to keep clean such as grouting between tiles. The long-term effect of microorganisms can reduce the need for heavy-duty/strong cleaning products, which in the long-term can reduce the use of cleaning chemicals (personal communication with Innu Science and Novozymes).

Another advantage of these products is that the decomposition of organic material also removes bad odours. The need to mask such odours with fragrances is considerably reduced. Cleaning products containing bacteria can reduce bad odours since they reduce the growth of other microorganisms by decomposing the organic material on which these odour-forming microorganisms feed.

The most commonly used organism is Bascillus Sp (personal correspondence with Innu Science), which are microorganisms found naturally throughout the world. These microorganisms are well known and well documented in various contexts. In contact with producers of microorganisms, Nordic Ecolabelling has learnt that the same or similar microorganisms as used in cleaning products are used in sewage works. The risks of these microorganisms are therefore low with regard to emissions to water. The quantities of microorganisms in the products are also low.

**Professional products**

Nordic Ecolabelling has chosen in this version of the criteria to limit the use of microorganisms to products for the professional market. Professional users have more experience of cleaning products and different equipment from consumers.

As described under the product group definition microorganism products for spray applications are not included in the product group. The reason for that is to lower the risks of inhalation of substances that can be sensitising, see also O5.

**Risk Group 1**

The microorganisms that Nordic Ecolabelling permits must be DNA identified and belong to Risk Group 1[18] according to Council Directive 2000/54/EC, i.e. non-harmful to human health. Risk Group 1 only includes microorganisms/bacteria that have been evaluated to ensure that they are not resistant to antibiotics and similar. Nordic Ecolabelling only permits microorganisms in Risk Group 1.

The Canadian ecolabel EcoLogoTM[19] has had criteria[20] since 2002 for products containing microorganisms. EcoLogo stipulates requirements on the number of colony forming units[21] (see the Nordic Ecolabelling requirements on CFU below), requires that bacteria are in Risk Group 1[22] and are DNA identified, and that the product does not contain E. Coli,

[18] Group 1: A biological agent that is most unlikely to cause human disease.

[19] www.ecologo.org

[20] CCD 110, Cleaning and degraseing compounds: biologically based, http://www.ecologo.org/en/seeourcriteria/details.asp?ccd_id=455

[21] http://www.moldbacteriaconsulting.com/colony-forming-units-cfu.html

[22] Council Directive 2000/54/EC, Group 1: A biological agent that is most unlikely to cause human disease.

Streptococci, Staphylococci, bacillus cereus or salmonella (see the Nordic Ecolabelling requirements below).

**Pathogen species**

The inclusion of pathogen bacteria is not desired. This is already strictly regulated by only permitting microorganisms belonging to Risk Group 1. However, Nordic Ecolabelling considers it important to avoid contaminations and to exclude pathogen species such as E. coli, streptococcus (Enerococcus), staphylococcus aureus, bacillus cereus and salmonella. A similar requirement is seen by EcoLogo (EcoLogo, CCD 110).

The test methods are taken from the manufacturers of biological products and ingredients (personal communication with Innu Science and Novozymes).

**DNA identification**

In order to set requirements of the constituent micro-organisms, these must be DNA identified. Knowing what micro-organisms are in the product is essential.

A strain identification protocol shall be used for this purpose.

Identification can be performed using for example 16S ribosomal DAN, which is described in the following references:

| Test | Reference |
|---|---|
| 16S ribosomal DNA sequencing | Applied and Environmental Microbiology, 67: 4520-4530 (2001)<br>Applied and Environmental Microbiology, 71, 1178-1183 (2005) |

**Antibiotic resistance**

Nordic Ecolabelling has included particular requirements on antibiotic resistance since resistant bacteria are a problem at large in society.

There are many antibiotics on the market. The major types are aminoglycosides, macrolides, beta- lactam, tetracyclines and fluoroquinolones.

Läkemedelsverket[23] (Medical products agency) in Sweden was contacted regarding this requirement and they found it necessary to add that tests for Europe should be performed and interpreted according to EUCAST (European Committee on Antimicrobial Susceptibility Testing)[24] or Nordic AST[25] (Nordic Committee on Antimicrobial Susceptibility Testing).

**GMO**

The decision to prohibit GMO-based ingredients is founded on a precautionary principle. Since GMO-based ingredients can be used during microorganism production, there is a ban on these.

GMOs are a contentious issue, and the cultivation of GMOs is prohibited in several countries. Issues include food safety, the use of agricultural land, a lack of knowledge regarding the effects of GMO crops on local agriculture and forests, and the risk of negative

[23] Mail correspondence with Charlotta Edlund, Professor in microbiology, clinical researcher at Läkemedelsverket (2013-10-11)

[24] http://www.eucast.org/

[25] http://www.nordicast.org/page/35

environmental and health effects. The WHO defines the risk of GMOs as follows: the risk that genetically modified organisms spread their genes to wild populations; the continued presence of GMO following harvest; the sensitivity of non-targeted organisms to GMO; threats to genetic stability; a decline in biodiversity; and an increase in the use of chemicals in agriculture

**Colony forming units**

Colony forming units (CFU) refers to the individual colonies of bacteria, mould or yeast. CFU is a measure of how many colonies are found on a surface. This is evaluated by preparing a specimen that is spread evenly over an agar plate. This is then incubated at a suitable temperature and for a suitable period. The colonies that form are counted for a surface area or volume giving a measure of the number of colonies per kg, ml or similar (MBL, 2012).

The threshold for the number of CFU is based on data collected from the industry (personal communication with various manufacturers) and collaboration with Ecologo. A limit value that there must be more than 1.0 x 105 CFU in the in-use solution ensures that the microorganisms are included to produce a noticeable effect and not merely for marketing. The limit value refers to the in-use solution and not the concentrated product since it is most relevant to consider the number of microorganisms in the solution that is used during cleaning.

**Information on data sheet/label**

So that is clear to the end user that a product contains microorganisms, this must be clearly state on the product's label and/or data sheet. This is so that the user can decide on where and how to use the product.

It must be clear that the products are not to be used in places where immunocompromised people are present or on surfaces in contact with food.

It is important not to use microorganism-based products in areas where there are risks of contaminating food or in hospitals where immunocompromised people are present. Such requirements are also set in the criteria document from Green Seal[26]. To exclude the products in places where children are present is not as motivated. In schools, public swimming pools and other public places there is a need of products that also can remove bad smell better than just masking them with perfumes, which makes it less relevant to say that these products cannot be used amongst children. Ecologo does not have a restriction in concern to children either.

It should also be made clear on the labels that the products are not meant for spray application, i.e. the products should be recommended for other types of usage than spray application. As mentioned earlier in this document, the main reason is to lower the risks of inhaling aerosols caused by spraying.

**Performance**

One of the advantages of products containing microorganisms is that offer a prolonged cleaning effect. To ensure that Nordic Swan Ecolabelled products offer good cleaning performance, products containing microorganisms must comply with requirement R15 or

[26] www.greenseal.org

R16 (as all other cleaning products) and demonstrate that the product breaks down starch, fat, oil and protein. This can be demonstrated through tests such as:

- Protein - degradation of proteins shown as degradation on standard casein agar medium or through other scientifically acknowledged medium displaying protein degradation.
- Starch - degradation of starch shown as degradation on standard starch agar or through other scientifically acknowledged medium displaying starch degradation.
- Fat and/or vegetable oil: degradation shown as degradation on “Spirit Blue”-agar medium or through other scientifically acknowledged medium.

See also the added question regarding microorganisms in appendix 5a-c.

**Shelf life**

By performing a stability test the producer will show that the reduction of microorganisms over time is low, to ensure that the products perform well after storage when reaching the final users. After dialogue with Innu Science and Novozyme the requirement regarding shelf life, below has been included.

**National legislation in Norway concerning microorganisms**

There is in Norway legislation concerning declaration of microorganism containing products, FOR 1998-01-22 nr 93. Equivalent legislation does not exist in the other Nordic countries.

Products to be sold or marketed in Norway containing microorganisms have to fulfil the Norwegian legislation concerning microorganism just as all products need to fulfil all relevant legislation.

The Norwegian declaration of products of microorganism-based products is described in FOR 1998-01-22 nr 93, which is a declaration to be filled out and sent in. The Norwegian Environment Agency is the authority supervising this legislation. The active supervision is limited. The products that have been declared and approved can be found in the product registry (www.pib.no). The declaration does not contain information about performance or how product claims can be supported.

In the requirement below there is a text saying that products for the Norwegian market need to show that they fulfil the declaration legislation by being on www.pib.no as declared products.

There has also been discussions regarding “Forskrift om begrensning av forurensning (forurensningsforskriften) – FOR 2004-06-01”, but since it does not specifically treat microorganism products it is only included as a note to be fulfilled when relevant (it covers pollutants from many different industries).

## 5.4 Ecotoxicity and biodegradability

The requirements for ecotoxicity and biodegradability include three requirements:

- Long-term environmental effects
- Critical dilution volume (CDV)
- Content of substances which are not aerobically and/or anaerobically biodegradable

In all calculations, the highest recommended normal dose must be used. A higher dose is often indicated for special purposes, that are not performed daily. That dosage does not need to be used in calculations. The water in the toilet is not included as a part of the in-use solution.

Note that if the product is dosed as a unit containing a water-soluble foil intended not to be removed before diluting, the foil must be part of the product formulation in the requirements O12-O14.

## O12 Long-term environmental effects

Content of ingoing substances classified as environmentally hazardous according to Regulation 1272/2008/EEC ($C_{total}$) in the cleaning product is limited as follows:

$C_{total}$ ≤ the limit value in Table 3

$C_{total}$ is calculated using the following formula for all ingoing substances in the product:

$$C_{total} = M \cdot 100 \cdot C_{H410} + 10 \cdot C_{H411} + C_{H412}$$

where

M is the multiplying factor for H410 as described in the CLP regulation (EC) No 1272/2008

$C_{H410}$ is the concentration of substances with H410 in grams/litre in-use solution*

$C_{H411}$ is the concentration of substances with H411 in grams/litre in-use solution*

$C_{H412}$ is the concentration of substances with H412 in grams/litre in-use solution*

**The amount of ingoing substances with respective classification in the product in grams per liter in-use solution based on the highest recommended normal dose stated on the packaging.*

If data is missing on a substance, it is assessed according to a worst-case scenario with H410 and M factor of 100.

**Table 3 Limit values for environmentally hazardous substances**

| Category | Limit value (LV) (grams / liter in-use solution) |
|---|---|
| Concentrated, consumer | 10 |
| RTU, consumer | 10 |
| Concentrated, professional | 10 |
| RTU, professional | 10 |
| RTU windows (professional and consumer) | 2,5 |
| Outdoor cleaners (professional and consumer) | 0,0 |

- Appendix 1 (product) and Appendix 2 (raw material) signed and completed, or equivalent signed information.
- Calculation according to the above formula showing that the requirement is fulfilled. Nordic Ecolabelling's calculation sheet can be used which is obtained from Nordic Ecolabelling's websites.

### Background to requirement O12

A Nordic Swan Ecolabelled cleaning product must never be classified as environmentally hazardous, see requirement O2 Classification of the product. Substances that are classified as environmentally hazardous may be present in cleaning products in limited quantities. Substances that are toxic to the environment and are also not readily biodegradable or substances that are chronically toxic (H410, H411 and H412) constitute a potential problem for the aquatic environment. Limitation of these adverse characteristics will reduce the risk of negative environmental impacts.

The environmental properties of cleaning products are important, because cleaning products are discharged via the treatment plant into the recipient watercourse. Consequently, a requirement has been set concerning the maximum content of environmentally hazardous substances in a product. By weighting the parameters, substances classified as H410 are subject to the greatest limitation. The weighting in the formula is connected to classification limits for environmentally hazardous substances.

From 1 December 2012 the CLP Regulation changed the criteria used as its basis for classification as environmentally hazardous. This meant that many surfactants which were not previously classified as environmentally hazardous now needed to be, and they were therefore at that time exempted from the requirement, as surfactants have an important irreplaceable function in cleaning products. To promote usage of less environmentally hazardous surfactants, surfactants are no longer exempted in this criteria version. The multiplying factor M for H410 classifications is included in the calculation. To accommodate for these changes, significantly higher limit values for all subcategories are introduced, except outdoor products where substances with H410, H411, and H412 are banned.

## O13 Critical dilution volume (CDV)

The critical dilution volume (CDV) is calculated for all constituent substances included in the cleaning product. CDV is a theoretical value that takes account of each substance's toxicity and biodegradability in the environment.

The product's critical dilution volume (CDV) is calculated based on the highest recommended dose stated on the packaging.

The product's critical dilution volume (CDV) may not exceed the limit values for $CDV_{chronic}$ in Table 4.

**Table 4 CDV limit values**

| Category | $CDV_{chronic}$ (liters / liter in-use solution) |
|---|---|
| Concentrated, consumer | 4 000 |
| RTU, consumer | 250 000 |
| Concentrated, professional * | 5 000 |
| RTU, professional | 250 000 |
| RTU windows (professional and consumer) | 25 000 |
| Outdoor cleaners (professional and consumer) | 4 000 |

CDV is calculated using the following formula for all substances in the product:

$$CDV_{chronic} = \sum CDV_i = \sum \left( \frac{dose_i \cdot DF_i \cdot 1000}{TF_{i,chronic}} \right)$$

$dose_i$ = the constituent volume of each individual substance “i”, in g/l in-use solution

$DF_i$ = degradation factor for substance “i”, in accordance with the DID list

$TF_{i\ chronic}$ = chronic toxicity factor for substance “i”, in accordance with the DID list.

If $TF_{i\ chronic}$ is lacking, $TF_{i\ acute}$ can be used.

** In accordance with the DID-list “Detergents Ingredients Database” version 2023 or later, see Appendix 3 for further details. For substances not on the DID-list, or substances where biodegradation data is missing on the DID-list, the parameters must be calculated based on the guidance in part B of the DID-list and associated documentation must be presented.*

*Exemptions:*

- Micro-organisms are exempted from the CDV calculation.

**t̄** Calculation according to the above formula showing that the requirement is fulfilled. Nordic Ecolabelling’s calculation sheet can be used and can be obtained from Nordic Ecolabelling’s websites.

### Background to requirement O13

The critical dilution volume (CDV) is a theoretical value which considers the toxicity and aquatic degradability of each substance. Products with a lower CDV will have less potential adverse impact on the recipient watercourse.

CDV is calculated for all ingoing substances included in the cleaning product. Chronic data must be used because it better describes the environmental impact. When chronic data is unavailable, acute data can be used combined with higher safety factors.

Micro-organisms

Micro-organisms are living organisms that function more as “producers” of enzymes than as substances that are broken down when the product is used, so it is not relevant to include them in the CDV calculation. Furthermore, it is very difficult to place microorganisms in the CDV calculation, as they are not declared in a percentage concentration in the same way as other raw materials. Instead, their concentration is given in the form of number of “colony forming units” per millilitre. Micro-organisms are also not included on the DID list.

Micro-organisms produce enzymes that remain on the cleaned surface, but the quantity is judged to be very small. The enzymes produced are mainly lipase, protease, amylase and esterase. The effect on the CDV of these enzymes is expected to be small in comparison with, for example, the effects of surfactants and fragrances in cleaning products. According to one manufacturer, they are present in such small amounts that they cannot be measured using the typical enzyme measuring tools, either on the surface or in the air. Since the levels are so small, excluding them from the CDV calculation is not considered to pose any major risk.

## O14 Content of substances which are not aerobically and/or anaerobically biodegradable (aNBO and anNBO)

The product's total content of substances that are not aerobically biodegradable* (aNBO) and that are not anaerobically biodegradable* (anNBO) may not exceed the limits stated in Table 5 per litre of in-use solution.

The product's aNBO and anNBO are calculated based on the highest recommended normal dose stated on the packaging.

** In accordance with the DID-list "Detergents Ingredients Database" version 2023 or later, see Appendix 3 for further details. For substances not on the DID-list, or substances where biodegradation data is missing on the DID-list, the parameters must be calculated based on the guidance in part B of the DID-list and associated documentation must be presented.*

*Note that all surfactants must be aerobically and anaerobically biodegradable in accordance with O8. See also the exemption from the requirement of anaerobic biodegradability for substances which are not surfactants (Appendix 3, section 6, Anaerobic biodegradability).*

**Table 5 Limit values for aNBO and anNBO**

| Category | aNBO (grams / litre in-use solution) | anNBO (grams / litre in-use solution) |
|---|---|---|
| Concentrated, consumer | 0.04 | 0.08 |
| RTU, consumer | 1.00 | 1.50 |
| Concentrated, professional | 0.03 | 0.20 |
| RTU, professional | 1.00 | 1.50 |
| RTU windows (professional and consumer) | 0.50 | 0.50 |
| Outdoor cleaners (professional and consumer) | 0.00 | 0.00 |

T̄ Calculation of the concentration of aNBO and anNBO for the cleaning product in grams / litre of in-use solution. Nordic Ecolabelling's calculation sheet can be used and can be obtained from Nordic Ecolabelling's websites

### Background to requirement O14

A general requirement on the permitted amount of non-readily (aerobically) degradable and non-anaerobically degradable substances reduce the use of non-biodegradable substances in cleaning products to a minimal level. The requirement concerning the degradability of organic substances gives ecolabelled cleaning products a good degradability profile and reduces the potential accumulation of non-readily degradable substances in waste sludge and in other relevant pockets in the environment.

In some places sludge is used as a soil improver, thus, it is important that the sludge contains no or minimal levels of non-readily degradable substances.

Substances that are commonly used in cleaning products and that are not readily degradable (aNBO) include: fragrances, phosphonates, EDTA, iminodisuccinate, certain thickeners and colourants. Phosphonates and EDTA are also excluded under the requirement O6 excluded substances.

Organic substances with poor degradability remain in the environment for longer, which increases the risk of them damaging nature. Rapid biodegradability in both aerobic and anaerobic conditions is therefore desirable.

## 5.5 Performance

Under the performance requirement, a product must be at least as good as or better than the product with which it is being compared (the reference product). For professional products, the applicant can choose between conducting a laboratory test (O15) or a user test (O16). The laboratory test is the only option for consumer products. Cleaning products for textile floors can be tested with a user test.

For concentrated products for refill for RTU bottles which are always diluted at least 10 times by the user to the finished product with a certain amount of water performance requirements apply for the diluted final product.

### O15 Performance test – laboratory test (professional and consumer)

This requirement applies to all consumer products. Professional products can choose laboratory test (this requirement) or user test (see requirement O16).

The product must, through laboratory testing, demonstrate equal or better cleaning performance, when compared with a reference product in the same product category. The test product and reference product must also clean better than water alone.

If the product is marketed for both professional and consumer use, it must be tested against a professional product.

The test must be performed by a laboratory that meets the requirements concerning test laboratories in Appendix 3 (point 1B).

The performance test must be performed in accordance with the test framework described in Appendix 5, where information about choice of product dosage, reference product, soil types, and report documentation requirements are also stated.

If the product is tested in accordance with the EU Ecolabel's test for hard surface cleaning products (Commission decision of 23 June 2017 or later version), this laboratory test can be used.

- Alternative a: Documentation on the test laboratory demonstrating compliance with the requirements concerning test laboratories in Appendix 3 (point 1B).
- Alternative a: Test report in accordance with Appendix 5. The report shall demonstrate that the product is equal to or better than the reference product and better than water.
- Alternative b: Description of how the EU Ecolabel test has been performed and complete results from the test.

## O16 Performance test - user test (professional products)

This requirement applies only to professional products that choose to demonstrate product performance with the user test. The alternative is to choose the laboratory test (see requirement O15).

The product must demonstrate cleaning performance that is equal to or better than a reference product within the same product category in 80% of tests.

The performance of the product is judged on the following parameters:

1. Ability to remove soil in comparison to the reference product
2. Gentleness to the cleaned surface (i.e., material care) in comparison to the reference product
3. Effectiveness in comparison to the reference product

In addition, there are some specific questions for certain product types (WC/sanitary, window cleaners, outdoor cleaners, wash polish/wash-and-wax products, and products that contain micro-organisms).

The tests must be performed by at least 10 users. The users must be professional cleaning staff. All users/testers must complete the form in Appendix 6 (for all cleaning products except wash polish/wash-and-wax) or Appendix 7 (for wash polish/wash-and-wax products). The applicant must then collate the results according to the "summary of results" form in Appendix 6 or Appendix 7. The formulation of the test product must be attached to the overall result of the user test.

If the product is tested in accordance with the EU Ecolabel's test for all-purpose cleaners and sanitary cleaners (Commission decision of 23 June 2017 or later version) and the tests are performed by at least 10 users who are all professional cleaning staff, this user test can be used.

*Note: Products containing micro-organisms must demonstrate residual cleaning effects via the laboratory test as instructed in Appendix 5 under heading "Prolonged effectivity test for products containing micro-organisms."*

- Alternative a) for all cleaning products except wash polish/wash-and-wax care products: Description of how the test is performed, plus all fully completed questionnaires, plus a summary of the responses (see Appendix 6), and the formulation of the test product.
- Alternative b) for wash polish/wash-and-wax care products: Description of how the test is performed, plus all fully completed questionnaires, plus a summary of the responses (see Appendix 7), and the formulation of the test product.
- Alternative c) Description of how the EU Ecolabel test has been performed, the complete results from the test (only if the tests are performed by at least 10 users who are all professional cleaning staff), and the formulation of the test product.

### Background to requirement O15 and O16

Performance tests are primarily a quality requirement to ensure that a good cleaning result is achieved at the stated dose of the ecolabelled product. A product that shows good performance at the dose stated on the label reduces the risk of over-dosing, since the user can see that the product is effective and has no need to use more than is recommended.

Under the requirement, a product must be at least as good as or better than the product with which it is being compared (the reference product). For professional products, the applicant can choose between conducting a laboratory test (O15) or a user test (O16).

The laboratory test is the only option for consumer products (O15). The reason for this is partly that Nordic Ecolabelling has not seen any great demand to be able to conduct user tests on consumer products, and partly that professional users have more experience of using products since they do so every day, and so a test performed by a professional user yields more information than one performed by a consumer.

**Laboratory test**

The laboratory test involves the test product (the product that is the subject of the Nordic Swan Ecolabel licence application) being tested in a laboratory and compared with a reference product. The reference product must be in the same category and have the same area of use as the test product, e.g., a concentrated floor cleaner for consumer use must be compared with another concentrated floor cleaner. The reference product must be a product that is well-established/well-known in the market. The reference product in the laboratory test may be from the same manufacturer as the product for which a licence is being sought. Nordic Ecolabelling has not specified a list of which reference products can be used, since cleaning products come in countless variations, making such a reference list extremely long and difficult to keep updated.

In order for the product to be judged effective, the test product must be equal to or better than the reference product and better than water. This latter point means that the tested cleaning product must have a better cleaning effect than cleaning just with water.

The requirements concerning the laboratory are set out in Appendix 3 of the criteria.

The instructions for the laboratory test can be found in Appendix 5.

Products that are marketed for multiple areas of use or other types of soil must be tested on all the key soil types for which the product is marketed, including soil types that may not be listed in Table 1 in Appendix 5 (e.g., soil containing protein and starch). WC cleaners must be tested for limescale.

Outdoor cleaners are a separate category in Appendix 5. The soil types have been chosen to be soot, fat, oil, asphalt and biological material. As stated in the section “What can carry the Nordic Swan Ecolabel,” products claiming biocidal effects such as products killing algae cannot be labelled.

**User test**

In this revision, Nordic Ecolabeling considered to remove the alternative for professional products to meet the performance requirement with a user test.  However, due to lack of standard test methods and difficulty in recreating in a laboratory the reality of how some professional products are used, Nordic Ecolabelling has instead revised the user test to be more robust.  Now the user test must be performed by at least 10 users and the users need to be professional cleaning staff.

The EU Ecolabel’s user tests for “Hard-surface cleaning products” can fulfil this requirement only if 10 users who are all professional cleaning staff carry out the performance test. This is in line with Nordic Ecolabelling's revision of the user test requirements.

The user test involves the product being sent out, along with a questionnaire (found in Appendix 6 and Appendix 7 of the criteria), to a selection of testers/companies whose professional cleaning staff test the product at least 10 times in each place. After conducting the test, the tester considers how effective the test product was in comparison with the product that the tester usually uses (the reference product), which should be a product for the same purpose and in the same category. The tester then judges the performance based on:

- Ability to remove soil
- Gentleness to the cleaned surface (i.e., material care)
- Effectiveness
- In some cases, other criteria specific to the type of cleaner

For products containing microorganisms, Appendix 6 and Appendix 7 have extra questions about the long-term effect of the product compared with other products. This is to indicate whether the microorganisms have an additional effect from the users' perspective. However, a laboratory test is still required to demonstrate prolonged cleaning effect (see micro-organism requirement proposal in Appendix 8 and lab test instructions in Appendix 5).

For a product to pass the test, 80% of the testers/testing companies must state that the product is as good as or better than the reference product.

For wash polish/wax-and-wash care products, the questions for the user test in Appendix 7 are divided into sections regarding application and cleaning/maintenance. The test persons will write how good they think the product is and at least 80% of the test persons need to give the product an overall grade of 3 or higher to give the product a final ok on performance.

## 5.6 Packaging requirements

Nordic Ecolabelling have set requirements on packaging to contribute to a circular economy by increasing the possibility to recycle the material, improving the quality of recycled material, and promoting reuse of materials. The following are requirements on the primary packaging such as bottles, containers, pouches, and cardboard boxes:

- Recycling design of packaging and closures (excluding pouches)
- Labels for rigid plastic packaging
- Recycling design of pouches/plastic bags
- Weight-Utility Ratio (WUR)
- Packaging for foam/spray products and concentrated products for refill for RTU bottles

### O17 Recycling design of packaging and closures (excluding pouches)

Plastic packaging of less than 200 liter should have a design that enables effective material recovery. This means that:

- The plastic packaging and closure must be made from Polyethylene (PE), Polypropylene (PP) or Polyethylene terephthalate (PET).

*Exemption is made for foam/spray triggers that can contain following plastics in small technical details: polyoxymethylene (POM), expanded polyethylene (EPE), ethylene butyl*

*acrylate copolymer (EBA), synthetic rubber copolymer of acrylonitrile and butadiene (NBR), and up to 6% Ethylene vinyl acetate (EVA)*

*Exemption is made for PE- or PP-closures that are used in squeeze bottles. The closures can contain a TPE (thermoplastic elastomer)-membrane of the type TPE-PE (based on polyethylene), TPE-PP (based on polypropylene) or SEBS (Styrene-Ethylene-Butylene-Styrene thermoplastic elastomer). If the closure is to be used on a PET-bottle, the membrane must have a density below 1.0 g/cm3.*

- PS (polystyrene) and PVC (polyvinylchloride) or plastics based on other types of halogenated plastics must not be present in the closure.
- Packaging should be white or uncoloured. Exemption: packaging containing recycled plastic (postconsumer recycled) may be coloured/tinted. The colouration may not include carbon black.

*Exemption is made for small amounts of carbon black used in other colours than black. It must then be documented that the NIR sensor reads and sorts the box/bottle/container or the closure to the correct plastic fraction.*

- Carbon black pigments cannot be added to the closures. Exemption is made for small amounts of carbon black used in other colours than black. It must then be documented that the NIR sensor reads and sorts the box/bottle/container or the closure to the correct plastic fraction.
- Fillers (such as CaCO3) cannot be included in PE or PP packaging and closures at a level that the density of the plastic exceeds 0.995g / cm3
- Metal parts may not be included in the packaging or closure.

*There is, however, an exemption for parts for foam triggers as well as other parts of the foam function in foam bottles, which are sold together with refill packaging to the professional market. Small metal parts in pumps are also exempted (both for professional and consumer, with or without refill).*

- Packaging and closures must be compatible with each other, in accordance with the following:
  - PET: closures must have a density of less than 1 g/cm$^3$. Silicon closures are not allowed
  - PP and PE: Silicon closures are not allowed
  - PE: PP/OPP-closures are not allowed unless the following test or similar is stated on the packaging: "Take the cap/closure off prior to recycling to improve recycling".

*Packaging includes bottles, containers and similar. Closures include caps/lids, dosage equipment and pumps mounted on the packaging.*

- Packaging specifications (including bottle and closures) or certificate showing the materials used and the colours of any plastic packaging or closures.
- Appendix 4 Declaration from the manufacturer of the packaging.
- A signed declaration of compliance with the stated material composition for the packaging, including bottle, closure, filler, colorant where applicable, Appendix 4 or an equivalent declaration may be used.
- A calculation showing that the density measurement is not exceeded.

- Label showing text regarding instruction to remove the cap before recycling, where applicable.

## O18 Labels for rigid plastic packaging: Design for recycling of packaging

The following is required for labels ("traditional label," shrink film label, sleeve, etc.):

**Label material**

For packaging made from polyethylene (PE) and polypropylene (PP):

- The label must be of the same material as the packaging and fulfill the purity requirements of > 95% polypropylene (PP) or > 99% polyethylene (PE).
  - Exemption: Fold-out (cross-over) labels of PP if the label does not cover more than 50% of the packaging surface for sizes ≤ 500 ml and 70% for sizes > 500 ml.*

For packaging made from polyethylene terephthalate (PET):

- The label must be of either > 95% polypropylene (PP) or > 99% polyethylene (PE) with a density < 1.0 g/cm3.
- The label must not cover more than 50% of the packaging surface for sizes ≤ 500 ml and 70% for sizes > 500 ml.*

**Instructions and example calculations can be found in section 8 in Appendix 3.*

**Print**

- Printing inks for rigid plastic packaging must be compliant with EuPIA exclusion policy*
- Direct print on the container is not permitted except for date codes, batch codes and UFI (Unique Formula Identifier).

**in accordance with https://www.eupia.org/wp-content/uploads/2024/03/20240313-EuPIA_Exclusion_Policy_for_Printing_Inks_and_Related_Products_-March-2024_6th-Edition-v1-1.pdf*

- Label specifications showing the material used and density. Appendix 4 can be used or a Recyclability rate certificate from RecyClass showing that the packaging is fully recyclable with a minimum recyclability score of B.
- For labels of different material than the packaging: Calculation of label size compared to the surface of the container. Nordic Ecolabelling's calculation sheet for the packaging can be used.
- Declarations that PS, PVC and other halogenated plastics, aluminium and other metals have not been used. Appendix 4 can be used.
- Declaration from the applicant that direct print is not used except for date codes, batch codes and UFI. Appendix 1 can be used.

### Background to requirement O17 and O18

To contribute to a circular economy, the product must be designed in a way that enables reuse and/or the best recyclability potential as well as the use of recycled material. The different materials used in the product must be separable from each other, so that the materials can be entered into their own material stream for recycling at end-of-life.

### Bottle

“Plastförpackningar – En återvinningsmanual från FTI” (Plastic Packaging – A recycling manual from FTI, the company that was previously responsible for recycling packaging in Sweden) lists plastic packaging made from Polyethylene (PE), Polypropylene (PP) and Polyethylene terephthalate (PET) as the plastic types that are best from a recycling perspective. PP and HDPE packaging works for every stage of the recycling process. However, PET has a limited market of purchasers.[27]. Since these types of plastic are the best from a recycling perspective, Nordic Ecolabelling also sets requirement that the plastic bottles should be made from these plastic materials.

Compostable/biodegradable plastics such as PLA are not suitable for recycling in today’s systems and can cause problems in the existing material recovery process. Such compostable/biodegradable plastic therefore does not fit in with the EU’s objective of increasing material recovery and promoting the circular economy in the current Nordic recycling system as it stands today. Nordic Ecolabelling has therefore decided not to include compostable/biodegradable plastic on the list of accepted packaging materials.

### Closure (caps/lids/pumps)

Since Polyethylene (PE), Polypropylene (PP) and Polyethylene terephthalate (PET) are the plastic types that are best from a recycling perspective are PS and PVC or plastics based on other types of halogenated plastics not allowed in the closure or label either.

Silicone closures are not allowed on the bottles since the influence the recycling process in a negative way. The optimal is to have the closure in the same material as the bottle, see more under section "compatibility" below.

TPE based on TPE-PE, TPE-PP and SEBS is allowed as membranes in squeeze-bottle closures made of PE or PP. These are compatible with PE/PP, hence small amounts will not disturb the recycling process or quality. Membranes on closures attached to PET-bottles must have a density < 1.0 g/cm$^3$, in order to separate from the PET during the sink/float process[28].

### Colourants and printing

Nordic Ecolabelling wishes to encourage the highest possible quality and purity of the products that enter the material recovery systems. The leaflet from Plastkretsen and FTI also mentions the way that colourants and inks affect the recycling potential and the quality of recycled plastic. Reducing the use of chemical colourants is one of the tips given. Colourless plastics have the highest recovery value, making them easier to recycle. Dark colours, including the use of carbon black, can cause problems in modern and automated sorting plants, as the systems have difficulty analysing dark colours. These products can therefore end up in the residual waste fraction and not be recycled. Consequently, Nordic Ecolabelling sets the requirement that plastic packaging, including closures must not be black.

In the recycling process the pigments cannot be removed from the recycled materials. During discussions with the industry, Nordic Ecolabel has come to understand that when

[27] Förpacknings- och Tidningsinsamlingen, Plastförpackningar – En återvinningsmanual version 0.7, June 2017.
[28] Correspondence with Sina Lystvet, Grønt Punkt Norge, 2021-01-08

using recycled plastics, it is sometimes necessary to add pigments to tone the plastic to give it a more appealing colour.

The Nordic Ecolabel has decided to exempt packaging made from post-consumer recycled plastic from this requirement and they can be coloured/tinted. The coloration/tint cannot be done with Carbon black, since that is the pigment that causes most problems during recycling.

**Label**

There is a strong interest from the recycling sector for the Nordic Ecolabel to set requirements on the labels that promote recycling, and there is a lot happening in this area now both politically and technology wise. The Nordic Ecolabel's intentions are to follow the political development in Europe on this. The goal is to set requirements on packaging and labels securing good recyclability.

When it comes to recycling plastic packaging, the best alternative is when the label is made of the same material as the bottle. Otherwise, if the near-infrared sensor at the sorting facility hits the label instead of the bottle, the bottle may end up in the rejected fraction. Therefore, Nordic Ecolabelling sets requirements on labels to promote correct sorting and minimize rejects.

Fold-out labels are increasingly common. To ensure both the label's quality while on the package and recyclability of the package after use, Nordic Ecolabelling has set requirements for fold-out labels.

Paper labels on plastic bottles can cause fibres from the paper labels to be transferred into the recycled plastic and cause problems for the manufacture of new products. Therefore, paper labels are not allowed.

A float/sink bath is another sorting step that can sort plastics of different densities. For PET containers, only PP or PE labels with density <1.0 g/ml are allowed to ensure correct separation in the float/sink bath. (PET has a density > 1.0 g/ml). As a consequence, for the time being, cPET labels are not allowed.

PET-G labels/shrink film labels are excluded on PET containers since PET-G is problematic in recycling in large quantities as it is not compatible with the PET commonly used for the containers (A-PET).

PVC and other halogenated plastics are excluded since they lead to adverse environmental impacts in waste handling.

Laser printing is permitted as there are no inks used in the process.

Direct printing on the container is restricted, as ink residues lower the quality of the recycled plastic.

Metallized labels can be detected by metal detectors causing the packaging to be sorted to reject. Thin metal layers do not seem to possess major problems for the sorting or recycling, if the labels can be separated from the containers. However, these metal materials will not be recycled, and single use of metal is not supportable from a resource point of view.

**Metal**

Metal residues, for their part, cause plastics to be rejected if there are metal detectors on the sorting line. Metal residues can also break down the plastic and become a problem in later plastic production[29],[30]. An exception is made, however, for metal used for the foam function in foam flasks that are used repeatedly (professional products), as this is important from a quality perspective.

It was decided in December 2020 to allow metal parts in pumps, in line with criteria version 6.1 and onwards for hand dishwashing detergents. Recyclers have confirmed that while this metal is not recycled as metal, it does not interfere with plastic recycling. However, pumps help with controlled dosing.

**Compatibility**

Inorganic filler can change the density of the plastic. If the plastic becomes too heavy, it sinks to the bottom in the water bath and is separated out for incineration instead of material recovery. This is why the criteria for cleaning products also contain a requirement that filler must not be added to the HDPE to such a level that its density exceeds 1 g/cm3 and to PP in such level that the density exceeds 1 g/cm3.

Nordic Ecolabelling proposed earlier to ban OPP and PP closures on HDPE bottles. The reason for this was that PP has a higher melting point than HDPE and thus causes problems when using the recovered HDPE fraction[31],[32]. PP labels on an HDPE bottle weigh very little in this context, but a PP closure on an HDPE bottle leads to too much PP in the HDPE fraction, in percentage terms[33]. However, the market is not yet ready for such a ban on PP closures on HDPE-bottles. There are advantages of having different plastic materials in closure and bottle when looking at how well the bottle is closed and avoids leakage. Producers state that it is hard to injection mold flip top closures in HDPE. It is also hard for the producers to go from HDPE bottles to PP bottles due to differences in mechanical properties. Nordic Ecolabelling has therefore chosen to instead add a text to encourage the user to separate bottle and closure before recycling. Nordic Ecolabelling will look closer on this and re-evaluate this during coming revisions.

### O19 Recycling design of pouches/plastic bags

- The plastic packaging and closure must be made from Polyethylene (PE), Polypropylene (PP) or Polyethylene terephthalate (PET).

*Exemption is made for TPE-PE in fittings for pouches in closed-system automatic dosing.*

- The packaging should be made of monomaterial, i.e. not laminates with layers of different materials.
- Silicone, PS and PVC or plastics based on other types of halogenated plastics must not be present in the closure or label.
- Carbon black pigments cannot be added to the pouch or closures. Exemption is made for text and pictograms. Exemption is also made for small amounts of carbon

[29]Plaskretsen and FTI, Bättre förutsättningar för återvinning av plastförpackningar.
[30] http://www.plasticsrecycling.org/hdpe sourced on 08.08.2017
[31] Förpacknings- och Tidningsinsamlingen, Plastförpackningar – En återvinningsmanual version 0.7, June 2017.
[32] http://www.plasticsrecycling.org/hdpe sourced on 08.08.2017
[33] http://www.plasticsrecycling.org/hdpe sourced on 08.08.2017

black used in other colours than black. It must then be documented that the NIR sensor reads and sorts the pouch or the closure to the correct plastic fraction.

- Fillers (such as CaCO3) cannot be included in PE or PP packaging and closures at a level that the density of the plastic exceeds 0.995g / cm3.
- Barrier coatings can only be made of EVOH (Ethylene vinyl alcohol) in maximum amounts of 5% related to the total weight.

*Closures include caps and lids. The packaging includes pouches or other plastic "bags".*

- Packaging specifications (including pouch, labels and closures) or certificate showing the plastic used and what colours the packaging and closure has.
- Appendix 4 declaration from the manufacturer of the packaging.
- A signed declaration of compliance with the stated material composition and barrier coatings, for the packaging including pouch, closure, filler, colourant where applicable, Appendix 4or an equivalent declaration may be used.
- A calculation showing that the density measurement is not exceeded.

### Background to O19

Nordic Ecolabelling has had dialogues with Svenska Förpackningsinsamling (FTI, the company that was previously responsible for recycling packaging in Sweden) regarding pouches. They suggested only accepting pouches of PE since they are the easiest to recycle, but Nordic Ecolabelling has decided to use the same requirements on plastics as in O17 for bottles/containers etc. An extra requirement has been added regarding not allowing laminates of different material layers, i.e., the pouches should be made of monomaterials.

Nordic Ecolabelling has decided only accepting EVOH up to maximum 5% (in relation to the maximum weight) as a barrier coating. This is in line with what the recycling companies recommend so that the recycling process is not adversely affected. In the EU Ecolabel there is a requirement on barrier coatings banning polyamide barriers, functional polyolefins, metallised barriers and light-blocking barriers. The requirement of Nordic Ecolabelling mean that these are also excluded.

The requirements on colour and fillers are the same as for bottles (O17).

## O20 Weight-Utility Ratio (WUR)

WUR is a measure of the amount of packaging used to deliver an amount of product with a certain benefit.

The exemptions from WUR calculation are:

- Packaging made from more than 80% post-consumer recycled (PCR)* raw material is exempted from the requirement.
- Products that are supplied in packaging that is part of a take-back system** for a product.

** 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.*

*** Take-back system refers to packaging that are taken back, washed and refilled. Packaging that is a part of a recycling system where the packaging is recycled into new plastic is not part of what here is called a take-back system.*

The calculation of WUR (grams of packaging/litre of in-use solution) is performed as follows:

$$WUR = \sum \left( \frac{2 \cdot W_i - 2.5 \cdot R_i}{D_i \cdot t_i} \right) \leq limit\ value\ in\ Table\ 6$$

$W_i$ = Weight of primary packaging in grams, including closure, fitted dosing devices and similar + any refills (that are sold per original bottle) in grams including closures.

$R_i$ = Weight (g) of recycled material (postconsumer) in the packaging component (i) in grams.

Packaging is considered postconsumer recycled if the raw materials are recovered following use by consumers. If the raw material is industrial waste from the material or packaging producer's own production, the material is not considered to be recycled.

$D_i$ = No. of functional doses in the primary packaging component (i). For products that are sold pre-diluted, D = product volume (in no. of litres).

If the primary packaging is sold packaged together with a refill, D is calculated as the sum of the functional doses in both packs (just as V is the sum of the weight of both packs (see description of V)).

$t_i$ = Reuse factor. This is 1 + the number of times the packaging component (i) is reused (through the sale of refills). t = 1 if the packaging component is not reused for the same function (disposable packaging).

t > 1 may only be used if it can be documented that the packaging is reused several times for the same purpose.

**Table 6 WUR limit values**

| Product type | WUR limit (grams of packaging/litre of in-use solution) |
|---|---|
| Foam/spray products | 175.0 |
| Other RTU products | 150.0 |
| Concentrated cleaning products including wash polish/wax-and-wash products and facade and terrace cleaners | 1.0 |
| Mix-it-yourself RTU products (i.e., concentrated products for refill for RTU bottles which are always diluted at least 10 times by the user to the finished product) * | 30 |

**Note that if the refill is dosed as a unit containing a water-soluble foil intended not to be removed before diluting, the foil must be part of the product formulation in the requirements dealing with CDV, environmental hazards and aNBO and anNBO. (O12-O14). If the product is not marketed together with a reusable packaging with contents, but if the label or other communication refers to a specific packaging, bottle or similar, which should be used for dilution, this is referred to as the reusable packaging. WUR for this reusable packaging is calculated as if the packaging were filled with finished product.*

- Declaration/documentation from the packaging manufacturer stating the type of material in the packaging components (e.g., closure (cap, foam/spray nozzle etc.), bottle and labels). Appendix 4 can be used.
- Calculation of weight-utility ratio (WUR) and required documentation on reuse of the packaging component. Nordic Ecolabelling's calculation sheet can be used and can be obtained from Nordic Ecolabelling's websites.
- Declaration from the packaging manufacturer about the proportion of recycled material, if recovered/recycled material is used. Appendix 4 can be used.
- If t >1: Documentation in the form of sales statistics or similar showing how many refills are sold per original packaging.
- If the exemption is used:
  - Documentation that shows that packaging made of more than 80% post-consumer recycled (PCR) material (Appendix 4 can be used).

    or
  - Documentation that shows is part of a take-back system for a product.

**Background to requirement O20**

The purpose of the weight-utility ratio (WUR) is to reduce the amount of packaging and promote the use of recycled materials and refill options, thus helping to ensure a reduction in the unnecessary transport of packaging and air, and so lower CO2 emissions. WUR is a measure of the amount of packaging used to deliver an amount of product with a certain benefit. This restriction promotes the use of concentrated products by relating the amount of packaging to the dose.

Nordic Ecolabelling has chosen to set a requirement for primary packaging in the cleaning product criteria for two reasons: There is little steerability of distribution packaging and it punishes small-scale manufacturers unnecessarily harshly. In addition, it is through optimising primary packaging that the greatest environmental gains can be made for products such as cleaning products.

Included in the primary packaging is the weight of the packaging in which the cleaning product is packed. This also includes labels, closures and any fitted dosing devices, etc.

The requirement level is 1.0 for concentrated products, 175 for foam/spray products and 150 for other ready-to-use products. In addition, a weighting factor of 2.5 in the WUR calculation promotes the use of recycled material in the packaging. The requirement level for the WUR calculation has been set based on Nordic Ecolabelling's experiences of the licensing work for both professional products and consumer products.

Nordic Ecolabelling values the requirement level for WUR as a means to exclude the most extravagant bottle designs, without preventing small bottles for concentrated products.

It is specified that t = 1 if there is no documentation that the packaging is reused multiple times. If t > 1 the manufacturer must be able to document this for example with sales figures for the number of refills in relation to the reusable packaging.

Manufacturers who can show that refills are sold in stores may also include the refills in their calculations. In such cases, however, Nordic Ecolabelling wishes to see the supporting documentation/marketing statistics.

The letter R in the equation stands for the amount of recycled material in the packaging.

$R_i$ = Weight (g) of recycled material (postconsumer) in the packaging component (i) in grams.

The WUR requirement include an exemption for packaging that is made from more than 80% recycled material. The EU Ecolabel has introduced this in its criteria for Hard Surface Cleaning Products, and Nordic Ecolabelling believes it is an appropriate way to try to stimulate a high proportion of recycled packaging material.

Take-back system for a packaging is exempted since if packaging is recycled as such (taken back, washed and refilled) reduces the need for virgin materials and environmental impact of packaging significantly.

### O21 Packaging for foam/spray products and mix-it-yourself RTU products

a) Foam/spray products must not use a propellant.

b) All foam/spray products must have a permanent aerosol-reducing nozzle.

Alternatively, other aerosol-reducing devices such as aerosol-reducing formulation in the form of a viscous product are acceptable if test results are provided showing that the amount of inhalable, thoracic, and respirable aerosol is at least as low for the test product in its ordinary packaging compared to a Nordic Swan labelled reference product with a mesh foamer. The chemical composition and physical properties of the reference product must be equivalent to the cleaning product that is the subject of the licence application. The test must be performed according to “Bestemmelse av inhalerbar, torakal og respirabel aerosolfraksjon” as described in Olsen et al. (2017)[34]. The test must be performed by a laboratory that meets the requirements concerning test laboratories in Appendix 2.

c) Packaging for mix-it-yourself RTU products (i.e., concentrated products for refill for which are always diluted at least 10 times by the user to the finished product) must be designed so that the user does not come in contact with the product when diluting.

d) For mix-it-yourself RTU products: If it is communicated on the label or in any other way that the product can be used in a foam/spray bottle, the following text must be included: "The foam/spray bottle must have an aerosol-reducing nozzle to protect the user's health".

- a: Documentation that propellant is not used, e.g. description of the packaging
- b: Declaration/documentation from the manufacturer of the foam/spray trigger, stating that it has a permanent aerosol-reducing nozzle.

Alternatively

[34] Rengjøringsmidler i sprayform – Frigir de helseskadelige stoffer til arbeidsatmosfæren som kan inhaleres til lungene? Olsen, R., *et al.* (2017). STAMI-rapport nr. 2. ISSN nr. 1502-0932. https://brage.bibsys.no/xmlui/bitstream/handle/11250/2433134/STAMI-rapport%2Bnr%2B%2B2%2B2017.pdf?sequence=2

- b: Description of the aerosol-reducing device and a report from the test of the aerosol reducing device in comparison with a reference product with mesh foamer if relevant.
- b: Documentation regarding the test laboratory in accordance with Appendix 2.
- c: Description of the packaging design showing that the user is not in contact with the product when diluting. Documentation in the form of a technical description and user instructions showing how the user avoids contact with the product.
- d: Label showing the text "The foam/spray bottle must have an aerosol-reducing nozzle to protect the user's health".

**Background to requirement O21**

Requirement a) Cleaning foam/sprays with propellant differ from trigger foam/sprays in that the container is metal and the products contain propellants that are often flammable.

Requirement b) Products sold in foam/spray bottles have a different exposure scenario to products that are diluted in water before use and applied with a cloth or mop.

Use of a foam/spray forms a mist, which the user may breathe in. This increases the risk that the user will be exposed to allergens or other substances that pose health hazards. Several studies suggest a link between cleaning sprays and asthma in adults.[35] The amount of health-related aerosol fractions – inhalable, thoracic and respirable – in the spray mist can be significantly reduced by using a foaming nozzle.[36],[37]

In the requirement there are two alternatives to show that the product does not produce large amounts of aerosol. The first alternative is that the product has a permanently mounted aerosol-reducing or foam nozzle on the packaging. The second alternative is that the producer reduces the aerosols by other means, for example by a viscous product. This can be approved if a test can show that the test product in original packaging has as low or lower amounts of inhalable, thoracic and respirable aerosol compared to a reference product with a mesh foamer. The reference product must be a Nordic Swan labelled product with for example mesh foamer.

The test must be performed in accordance with “Bestemmelse av inhalerbar, torakal og respirabel aerosolfraksjon” as described in Olsen et al. (2017),[38] The test must be performed at a laboratory fulfilling the requirements stated in section 1A in Appendix 3.

Requirement c) To minimize the risk to the user of the mix-it-yourself RTU products, it is required that the package must be shaped so that the user does not enter contact with the concentrate itself upon dilution. There are several ways to do that. For example, they may be enclosed tablets / pouches or ampoules of liquid detergent to be screwed into the cap of the reusable bottle.

[35] Siracusa A, et al. Asthma and exposure to cleaning products – a European Academy of Allergy and Clinical Immunology task force consensus statement. Allergy 2013;68: 1532–1545.
[36] Rengjøringsmidler i sprayform – Frigir de helseskadelige stoffer til arbeidsatmosfæren som kan inhaleres til lungene? Olsen, R., *et al.* (2017). STAMI report no. 2. ISSN no. 1502-0932. https://stami.no/wp-content/uploads/2017/02/STAMI-rapport20nr.202202017.pdf
[37] Personal contact with Raymond Olsen, STAMI, 2017
[38] Rengjøringsmidler i sprayform – Frigir de helseskadelige stoffer til arbeidsatmosfæren som kan inhaleres til lungene? Olsen, R., *et al.* (2017). STAMI-rapport nr. 2. ISSN nr. 1502-0932. https://stami.no/wp-content/uploads/2017/02/STAMI-rapport20nr.202202017.pdf

## 5.7 Licence maintenance

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

### O22 Customer complaints

The licensee must guarantee that the quality of the Nordic Swan Ecolabel product or service 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.

- Upload your company's routine for handling and archiving customer complaints

**Background to requirement O22 Customer complaints**

Nordic Ecolabelling requires that your company has implemented a customer complaint handling system. To document your company's customer complaint handling system, you must upload your company's routine describing these activities. The routine should be dated and signed and will normally be part of your company's quality management system.

If your company does not have a routine for customer complaint handling, it is possible to upload a description of how your company perform these activities. During the on-site visit, Nordic Ecolabelling will check that the customer complaint handling is implemented in your company as described. The customer complaints archive will also be checked during the visit.

### O23 Traceability

The licensee must be able to trace the Nordic Swan Ecolabel 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.

- Upload your routine or a description

**Background to requirement O23 Traceability**

Nordic Ecolabelling requires that your company has implemented a traceability system. To document your company's product traceability, you must upload your company's routine describing these activities. The routine should be dated and signed and will normally be part of your company's quality management system.

If your company does not have a routine for product traceability, it is possible to upload a description of how your company perform these activities. During the on-site visit, Nordic Ecolabelling will check that the product traceability is implemented in your company as described.

# 6 Environmental impact of cleaning products

The purpose of this section is to clarify which environmental parameters, at which stages of the product lifecycle, the Nordic Ecolabel places requirements on for this specific product group and why.

The relevant environmental impacts found in the life cycle of cleaning products are set out in a MECO scheme below. A MECO describes the key areas that have impact on the environment and health throughout the life cycle of the product – including consumption of materials/resources (M), energy (E), chemicals (C) and other impact areas (O). Nordic Ecolabelling sets requirements concerning the topics and processes in the life cycle that have a high environmental impact – also called hotspots.

Based on the hotspots identified, an RPS tool is used to identify where ecolabelling can have the greatest effect. R represents the environmental Relevance, P is the Potential to reduce the environmental impact, and S is the Steerability on how compliance with a requirement can be documented and followed up. The criteria contain requirements in those areas in the life cycle that have been found to have high RPS, since there is potential to achieve positive environmental gains.

When assessing the requirements to be set, there is a focus on setting requirements within the Nordic Swan Ecolabel's environmental strategic goals. The areas are biodiversity, climate and energy, chemicals, and resource use/resource efficiency (circular economy).

Based on these analyses, Nordic Ecolabelling recognizes a good potential to reduce important environmental impacts of cleaning products by setting requirements for:

- raw material sourcing - including requirements for plant materials for production of chemical raw materials (especially palm oil)
- ingoing substances - addressing exposure of chemicals harmful to health
- ecotoxicity and biodegradability - addressing impacts to aquatic organisms and ecosystems
- packaging - to address plastic and other packaging raw materials and disposal
- performance - to address chemical and packaging resource use and disposal (avoiding ineffective products that lead to overdosing, a problem that wastes both raw materials and packaging while increasing air and water pollution)

# Material, Energy, Chemicals, Other (MECO) scheme

| | Raw material | Production | Use | End of life | Transport |
|---|---|---|---|---|---|
| **Material**<br>Extraction and resource loss | Extraction of oil, gas, metals, and minerals for non-renewable raw materials<br>Agricultural production for renewable raw materials<br>Water consumption | | Water consumption in use (if applicable, e.g., for mixing concentrated products) | Loss of the material value if packaging is incinerated (higher impact) vs. recycled (lower impact) | |
| **Energy**<br>(GWP = Global warming potential, LCA study from Koehler 2009) | Energy consumption to extract/cultivate and process raw materials for product and packaging (15-30% GWP in LCA - higher water content reduces raw chemical contribution but increases packaging contribution) | Energy consumption to produce product and packaging (ca 5% GWP in LCA for liquids; ca 10% for powder or solid products due to energy for drying) | Energy for heating water for product use (50-75% GWP in LCA, if applicable)<br>Energy for transport from store to home by car (40-50% GWP in LCA for non-concentrated RTU products; otherwise <5%) | Energy from wastewater treatment and solid waste handling (5-20% GWP in LCA) | Energy use of transport vehicles (ca 5% in LCA) |
| **Chemicals** | Agricultural chemicals including pesticides and fertilizers<br>Exposure to hazardous chemicals in the work environment or nearby communities | Exposure to hazardous chemicals in the work environment or nearby communities | Consumer and professional users' exposure to allergens and other hazardous chemicals<br>Emission of VOCs during product use (if applicable) | Wastewater emissions of chemicals toxic to aquatic organisms<br>Emissions of phosphorous compounds that cause eutrophication | Air pollution from transport vehicles |
| **Other** | Biodiversity and ecosystem impacts from resource extraction and agriculture<br>Land right disputes and impacts on local and indigenous communities<br>Raw material production competing with food production | | Consumer and professional satisfaction influenced by product quality, effectivity, and shelf life<br>Reduced wastage based on dosing instructions and design<br>Reduction in accidents / improved child safety based on packaging design | Biodiversity and health impacts from hazardous chemicals from sewage sludge leaching to land and water<br>Emissions of microplastics or nanomaterial (due to product's formula or using the product) | Particulate matter from transport vehicles |

# Relevance, Potential, Steerability (RPS) scheme

| Life cycle stages | Area and assessment of R, P, S (high, medium or low) | Comments |
|---|---|---|
| **Raw materials** | | |
| | Fossil oil for production of chemical raw materials<br>R: High<br>P: Low<br>S: Low<br>RPS: Low | R is high due to a large consumption of energy and fossil resources.<br>P+S are low, as there is low potential and steerability for minimizing the use of fossil resources for chemical raw materials, due to the lack of available renewable raw materials. Also, a shift to renewable raw materials can lead to a burden shift concerning biodiversity (see next row). |
| | Plant materials (especially palm oil) for production of chemical raw materials<br>R: High<br>P: Medium<br>S: High<br>RPS: High | R is high due to non-sustainable extraction of renewable raw materials.<br>P is medium. There is low potential and steerability for minimizing the use of palm oil resources for chemical raw materials, since palm oil is the origin of most renewable raw materials, and the availability of alternative renewable raw materials is low. In addition, it may be difficult to trace where palm oil has been used as a feedstock in surfactant production. However, there is a high potential for minimizing the negative impacts of extraction of palm oil and other renewables.<br>S is high as requirements for RSPO certified palm oil origin can be set together with a supply chain policy and code of conduct. |
| | Plastic and other packaging raw materials<br>R: High<br>P: High<br>S: High<br>RPS: High | R is high due to a large consumption of energy and fossil resources.<br>P is high as the use of too much packaging and packaging that is not compatible with recycling is widespread, so there is a potential to limit the total amount of packaging and to promote design for recycling. There is also a potential for lowering the amount of packaging by requiring refills for RTU products.<br>S is high as requirements can be set for the total amount of packaging, the type of packaging and the combination of packaging materials that enables emptying and recycling. The steerability for required refills is low, because it is difficult for the license holder to control the scale of refill sales in stores, but other refill solutions as home delivery in reusable containers can be an option. |
| | Water and electrical consumption for production of raw materials<br>R: High<br>P: Medium<br>S: Low<br>RPS: Medium | R is high due to consumption of energy and fossil resources.<br>P is medium as there is a potential to limit the use of energy to lower emissions from production.<br>S is low as the production facilities requires a certain amount of water and energy use to run, and information about how and to what extent this can be reduced is missing. |

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| **Production/distribution** | | |
| | Water and electrical consumption for production of the cleaning product<br>R: Medium<br>P: Medium<br>S: Low<br>RPS: Medium | R is medium due to consumption of water, energy, and fossil resources. We expect that water and electrical consumption is higher as raw materials are processed into intermediate ingredients earlier in the supply chain and lower in final production, but this can vary.<br>P is medium as there is a potential to limit the use of water and of energy to lower emissions from production.<br>S is low as the production facilities requires a certain amount of water and energy use to run, and information about how and to what extent this can be reduced is missing. |
| | Water and electrical consumption for production of packaging<br>R: High<br>P: Medium<br>S: Low<br>RPS: Medium | R is high due to consumption of water, energy, and fossil resources to produce packaging.<br>P is medium as there is a potential to limit the use of water and of energy to lower emissions from production.<br>S is low as the production facilities requires a certain amount of water and energy use to run, and information about how and to what extent this can be reduced is missing. |
| | Transportation from production to retail and to consumers<br>R: Medium<br>P: High<br>S: Low<br>PRS: Medium | R is medium due to consumption of fossil resources for fuel and particulate matter and emissions from distribution vehicles<br>P is high as there is a potential to limit the use on non-renewable energy and to lower emissions from trucks, maybe also to organize logistics better.<br>S is low as distribution is carried out by external companies transporting both Nordic Swan Ecolabelled and non-Nordic Swan Ecolabelled products. |
| **Use phase** | | |
| | Water and electrical consumption when using the cleaning product<br>R: High<br>P: Medium<br>S: Low<br>RPS: Medium | R is high due to the use of water and consumption of energy and fossil resources for heating of water when using non-RTU products.<br>P is medium as the use of water can be minimized and the temperature of the water can be lowered.<br>S is low as energy resources used for heating of water is not often controlled by the users. Instructions/recommendations for use can help, but the steerability over users to limit water use or reduce water temperature is low. |
| | Exposure of chemicals harmful to health<br>R: High<br>P: High<br>S: High<br>RPS: High | R is high due to consumers being exposed to chemicals that are harmful to health<br>P is high as there is a potential to limit or exclude ingredients with negative impact on health, like allergens, CMR substances, endocrine disruptors. Special requirements for foam/spray products, which can be inhaled, can be set. For non-RTU products there is also a potential to limit overdosing and thereby minimizing the exposure. High efficacy can also help to reduce overdosing.<br>S is high as requirements to prohibit or strongly limit problematic substances can be set. The amount of product used can be limited by clear instructions for use and foam/spray nozzles that |

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| | | reduce the formation of inhalable aerosols. Requirements for efficacy can be set. |
| **End of life** | | |
| | Water and electrical consumption for wastewater treatment<br>R: Medium<br>P: Low<br>S: Low<br>RPS: Low | R is medium due to consumption of energy and fossil resources.<br>P is low as there is no potential for the licensees to limit the use on energy.<br>S is low as the sewage treatment plants are run by the public sector and hence difficult to affect by the producer of cleaning products. |
| | Packaging disposal (incineration, reuse or recycling)<br>R: Medium<br>P: High<br>S: High<br>RPS: High | R is medium due to the loss of fossil resources, if the packaging is not recycled.<br>P is high as the use of too much packaging and non-compatible packaging components is widespread, so there is a potential to limit the total amount of packaging and to promote design for recycling.<br>S is high as requirements can be set for the total amount of packaging, the type of packaging and the combination of packaging materials that enables emptying and recycling. |
| | Product emissions from use (degradability and toxicity to aquatic organisms)<br>R: High<br>P: High<br>S: High<br>RPS: High | R is high as cleaning products and their ingredients can all end up in the environment affecting biodiversity, even though they might take different routes. Cleaning products therefore risk harming both aquatic organism and the ecosystem, depending on the intrinsic properties of the ingredients.<br>P is high as there is a potential to reduce the content of environmentally hazardous ingredients like, substances toxic to aquatic organism, non-degradable substances, microplastics, endocrine disruptors etc.<br>S is high as requirements to prohibit or strongly limit problematic substances can be set. |

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# 7 Future criteria generation

Points will be added after the consultation.

# 8 Criteria version history

Criteria version history will be added after the consultation.

# 9 How to apply and regulations for the Nordic Ecolabelling

### Application and costs

For information about the application process and fees for this product group, please refer to the respective national website. For contact information see the beginning of this document.

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

### 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 prolonged or adjusted, in which case the licence is automatically prolonged, 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.

### Responsibility for Compliance with Applicable Legislation

When applying for the Nordic Swan Ecolabel, the applicant/licensee confirms compliance with all current regulatory requirements related to both the exterior and interior environment in connection with the production and handling of the product(s) covered by the application. Furthermore, the applicant declares that all applicable regulatory requirements within the Nordic region are met for the product(s). Compliance with these regulations is a prerequisite for obtaining a license.

### On-site inspection

In connection with handling of the application, Nordic Ecolabelling normally performs on-site inspection visit(s) 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 contact info in the beginning of this document. Further information and assistance (such as calculation sheets or electronic application help) is available. Visit the relevant national website for further information.

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.

### Regulations for the Nordic Ecolabelling of products

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

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

# Appendix 1 Declaration from the manufacturer of the cleaning product

To be submitted with an application for a Nordic Swan Ecolabel licence of cleaning products.

This declaration is based on the best available knowledge at the time of the application, including test results and/or declarations from raw material manufacturers. It is subject to change if new information or scientific findings become available. In such cases, an updated declaration must be submitted.

| | |
|---|---|
| **Product name:** | |
| **Product usage areas (all-purpose cleaner, window cleaner, WC-cleaner, etc):** | |
| **Product format (liquid, powder, tablet, water-soluble sheet, etc.)** | |
| **Type of product (mark all that are relevant):** | |
| **Concentrated, consumer:** Consumer products that require dilution with water prior to use. | |
| **RTU, consumer:** Consumer products that are pre-diluted and ready for use straight from the package including foam/spray products. | |
| **Concentrated, professional:** Professional products that require dilution with water prior to use. | |
| **RTU, professional**: Professional products that are pre-diluted and ready for use including foam/spray products. | |
| **RTU window cleaner:** Consumer and professional window and glass cleaners that are pre-diluted and ready for use straight from the package including foam/spray products. | |
| **Outdoor surface cleaners:** Consumer and professional cleaners that are for use outdoors. These are typically concentrated products for large surfaces. | |
| **Product dilution (see also Definitions table):**<br>Concentrate (requires dilution) | |
| Ready-to-use (pre-diluted) | |
| Mix-it-yourself RTU (e.g., tablet for refill bottle) | |
| Other or combination of the above (explain) _____ | |
| **Product contains micro-organisms? (check box if "yes")** | |
| **Intended Market:** | |
| **Professional product**<br>Products that are marketed for use in professional contexts such as cleaning services, institutions, and within the public sector. Products sold for use in the workplace are thus not automatically considered to be professional | |

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| products under this definition. The product is not considered to be professional if it is primarily sold through retailers.<br>Products that are primarily marketed to consumers, but that are also sold via wholesalers for professional use exist. Products that are sold to both consumers and professionals, are considered for the professional market if more than 80% of sales are to professional users. | |
| **Consumer product**<br>Cleaning products for use by consumers in or around their home that that are primarily sold through retailers. Products are considered for consumer use if more than 80% of sales are to consumers. | |
| **Product for both professionals and consumers**<br>Products sold to both consumers and professionals, but not more than 80% to either group. | |

If there is any uncertainty about whether the product is intended for professional or consumer use, Nordic Ecolabelling may request documentation clarifying where the product is intended to be sold.

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

- **Ingoing substances:** All substances* in the Nordic Swan Ecolabelled/chemical product regardless of amount, including additives (e.g. preservatives and stabilizers) from the raw materials. Substances released from ingoing substances (e.g. biocidal active substances generated by preservatives, such as formaldehyde) are also regarded as ingoing substances. Foil that is not removed before use of the product, and that is water soluble is considered as part of the formulation/recipe.

  **N.B. the difference from the definition of substances in the REACH Regulation (EC) No 1907/2006. Whereas a REACH substance encompasses a chemical element or compound as well as its stabilising additives and process impurities, a substance here refers to each of the constituents separately. The constituents of a UVCB substance (Unknown or Variable composition, Complex reaction products or of Biological materials) are also regarded separately, and all known constituents must be regarded.*

- **Impurities:** Trace levels of pollutants, contaminants and residues from production, incl. production of raw materials, that remain in the chemical product in concentrations ≤ 100 ppm (≤ 0.0100 w%). For formaldehyde other than as a biocidal active substance and for arylamine, the corresponding concentration is ≤ 25 ppm (≤ 0.0025 w%).

  *Examples of impurities: Background environmental pollutants from feedstock, as well as contaminants and residues from production such as reactants (incl. monomers), reagents, catalysts, by-products, scavengers, detergents for production equipment, carry-over from other or previous production lines.*

- **Impurities in the raw materials** in concentrations ≥ 10 000 ppm (≥ 1.0000 w%) are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled/chemical product.

| O4 Certified raw materials from oil palms | Yes | No |
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| **Mark your answers with an X in the relevant column.**<br>If the answer to all the questions below is No, put an X in the column to the right. | | |
| **Does the product contain palm oil or palm kernel oil?**<br>This includes by-products, residues, and waste fractions from palm oil industries, such as palm fatty acid distillate and palm effluent sludge.<br><br>If yes, is this palm oil/palm kernel oil RSPO certified?<br><br>What is the traceability level?<br>Mark below and state the certificate/licence number: | | |
| No traceability | | |
| Identity Preserved | | |
| Segregated | | |
| Mass Balance | | |

| **O5 Classification of ingoing substances** | | |
|---|---|---|
| **Does the product contain ingoing substances or impurities classified with any of the hazard codes below, including all classification variants (e.g. H350 also includes H350i)?**<br>If the answer to all the classifications below is No, put an X in the column to the right. | **Yes** | **No** |
| H420 – Ozone | | |
| H372 – STOT RE 1 | | |
| H334 – Resp. Sens. 1, 1A or 1B | | |
| H317 – Skin Sens. 1, 1A or 1B | | |
| H350 – Carc. 1A or 1B | | |
| H351 – Carc. 2 | | |
| H340 – Muta. 1A or 1B | | |
| H341 – Muta. 2 | | |
| H360 – Repr. 1A or 1B | | |
| H361 – Repr 2 | | |
| H362 – Lact. | | |
| EUH380 – ED HH 1 | | |
| EUH381 – ED HH 2 | | |
| EUH430 – ED ENV 1 | | |
| EUH431 – ED ENV 2 | | |
| EUH440 – PBT | | |
| EUH441 – vPvB | | |
| EUH450 – PMT | | |
| EUH451 – vPvM | | |
| **O6 + O7: Excluded substances** | | |
| **Does the product contain any of the following substances?** | **Yes** | **No** |
| Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), butylated hydroxytoluene (BHT, CAS No. 128-37-0), alkylphenol ethoxylates (APEOs) and other alkylphenol derivates (APD)) | | |
| Aminopolyphosphonates | | |
| Amphoacetates derivatives of N-hydroxyethyl imidazolines (EC No. 271-792-5, 271-794-6, 931-291-0, | | |
| Aromatic solvents and carriers, incl. chlorotoluenes, chlorophenols and chlorobenzenes<br>Solvents are defined in Directive 1999/13/EC: Organic substances with a vapour pressure of at least 0.01 kPa at 20 °C | | |
| Benzalkonium chloride (CAS No. 8001-54-5) | | |
| Bisphenols and bisphenol derivatives, defined as 34 bisphenols identified by ECHA for further EU regulatory risk management due to known or potential endocrine disruption or reproductive toxicity. EC/List No. 201-245-8 (BPA), 201-025-1 (BPB), 401-720-1 (4,4'-Isobutylethylidenediphenol), 216-036-7 (BPAF) and its 8 salts (278-305-5; 425-060-9; 443-330-4; 468-740-0; 469-080-6; 479-100-5; 943-265-6; 947-368-7), 201-250-5 (BPS), 201-240-0 (BPC), 204-279-1 (TBMD), 201-618-5 (6,6'-di-tert-butyl-4,4'-butylidenedi-m-cresol), 242-895-2, 248-607-1, 405-520-5 (D8), 217-121-1 (DAB), 227-033-5 (TMBPA), 210-658-2 (BPF), 411-570-9, 277-962-5 (contains BPS, 500-086-4 (contains BPA), 500-263-6 (contains BPA), 500-607-5 (contains BPA), 701-362-9, 904-653-0 (contains BPA), 908-912-9 (contains BPF), 926-571-4 (contains BPA), 931-252-8 (contains BPA), 941-992-3 (contains BPS), 943-503-9 (contains BPA) | | |
| Boric acid, borates, and perborates | | |
| Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts | | |

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| Halogenated organic compounds | | |
| Isothiazolinones (e.g. methylisothiazolinone (MIT), CAS No. 2682-20-4, metylchloroisothiazolinone (CMIT), C(M)IT/MIT (3:1), CAS No. 55965-84-9, CAS No. 26172-55-4, benzisothiazolinone (BIT), CAS No. 2634-33-5, octylisothiazolinone (OIT), CAS No. 26530-20-1 and dichlorooctylisothiazolinone (DCOIT), CAS No. 64359-81-5) | | |
| Linear alkylbenzene sulphonates (LAS) | | |
| Methyldibromo glutaronitrile (MG), CAS no. 35691-65-7 | | |
| Microplastics (O7)<br>Microplastics are synthetic polymer microparticles as defined in REACH Regulation ((EC) No 1907/2006), Annex XVII, Entry no. 78:<br>Synthetic polymer microparticles: polymers that are solid, and which fulfil both of the following conditions:<br>a) are contained in particles and constitute at least 1% by weight of those particles; or build a continuous surface coating on particles.<br>b) at least 1% by weight of the particles referred to in point (a) fulfil either of the following conditions:<br>(i) all dimensions of the particles are equal to or less than 5 mm.<br>(ii) the length of the particles is equal to or less than 15 mm and their length to diameter ratio is greater than 3.<br>The following polymers are excluded from this designation:<br>• polymers that are the result of a polymerisation process that has taken place in nature, independently of the process through which they have been extracted, which are not chemically modified substances.<br>• polymers that are biodegradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].<br>• polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].<br>• polymers that do not contain carbon atoms in their chemical structure. | | |
| Nanomaterials/-particles<br>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:<br>a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm<br>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<br>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 | | |
| Nitro musks and polycyclic musk compounds | | |
| NTA (nitrilo triacetic acid, CAS-no. 139-13-9), and its salts | | |
| Organic chlorine compounds, hypochlorites and hypochlorous acid | | |
| PBT and vPvB as defined in REACH Annex XIII, including those under ECHA PBT assessment https://echa.europa.eu/da/pbt | | |
| Per- and polyfluoroalkyl substances (PFAS)<br>PFAS is defined as any substance that contains at least one fully fluorinated methyl (CF3-) or methylene (-CF2-) carbon atom (without any H/Cl/Br/I attached to it) | | |
| Phosphate, phosphonate, phosphonic acid and phosphoric acid | | |
| Phthalates | | |
| Potential or identified endocrine disruptors, listed in any of the following "Endocrine Disruptor Lists" List I; II and III | | |
| Quaternary ammonium compounds, which are not readily aerobic biodegradable such as DTDMAC (CAS No. 61789-80-8), DSDMAC (CAS No. 107-64-2), DHTDMAC (CAS No. 61789-72-8) and DADMAC (CAS No. 7398-69-8) | | |

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| Siloxanes | | |
| Silver, colloidal silver, or nanosilver | | |
| Substances on the REACH Candidate list of SVHC substances<br>https://www.echa.europa.eu/candidate-list-table | | |
| Volatile organic compounds (VOC) | | |
| **O9 Fragrances** | **Yes** | **No** |
| Does the product contain fragrances (incl. plant extracts)?<br><br>If "yes," please answer the following questions about fragrances: | | |
| Have fragrances been added in line with IFRA guidelines? (IFRA, International Fragrance Association, www.ifraorg.org/) | | |
| Does the fragrance contain BHT? (see O6) | | |
| Does the product contain fragrance allergens that are judged to be sensitising with the hazard statement H317 and/or H334, or which are listed in Annex III of the Cosmetic Regulation?<br>If yes, please send in perfume specifications. | | |
| Does the product contain the fragrance allergens oak moss extract (Evernia prunastri, CAS No. 90028-68-5) or tree moss extract (Evernia furfuracea, CAS 90028-67-4)? | | |
| **O10 Preservatives** | **Yes** | **No** |
| Does the product contain preservatives?<br><br>If yes, please state name and log Kow/BCF:_____ | | |
| **O12 Long-term environmental effects** | **Yes** | **No** |
| Does the product contain substances classified as environmentally hazardous with H410, H411 and H412?<br>If yes, please state the amount (% by weight) per classification, and for H410 also state the M-factor:<br><br>_____ | | |
| **O17-O21 Packaging requirements** | **Yes** | **No** |
| Do all parts of the packaging meet requirements O17-O21? | | |
| For labels on PET containers and/or fold-out labels of different material than the packaging: Does the label cover > 50% of the packaging surface for sizes ≤ 500 ml or > 70% for sizes > 500 ml? (O18) | | |
| Is there any direct print on the container except for date codes, batch codes and UFI (Unique Formula Identifier)? | | |
| Are labels printed internal at the production site or by an external printing company (other than the label supplier)?<br>If yes, is the printing ink used for the plastic packaging compliant with EuPIA exclusion policy*?<br>*https://www.eupia.org/wp-content/uploads/2024/03/20240313-EuPIA_Exclusion_Policy_for_Printing_Inks_and_Related_Products_-March-2024_6th-Edition-v1-1.pdf | | |

If the answer to any of the above questions O5-O12 is Yes, please provide the following information for each relevant substance: CAS No. (where possible), chemical name, concentration (in ppm, % by weight or mg/kg). Also state whether the substance is present as an ingoing substance or impurity.

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If the product composition changes, a new declaration confirming compliance with the requirements must be submitted to Nordic Ecolabelling.

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| **Place and date** | **Company name** |
| **Responsible person** | **Signature of responsible person** |
| **Telephone** | **Email** |

# Appendix 2 Declaration from the manufacturer/supplier of the raw material to the cleaning product

To be used with an application for a licence for the Nordic Ecolabelling of cleaning products. To be submitted with an application for a Nordic Swan Ecolabel licence.

This declaration is based on the best available knowledge at the time of the application, including test results. If new information or scientific findings become available, please inform Nordic Ecolabelling and submit an updated declaration. For suppliers: If you do not have knowledge about the complete composition of the raw material/ingredient, you are obliged to obtain this information from the manufacturer.

| |
|---|
| Manufacturer/supplier: |
| Trade name of the raw material: |

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

- **Ingoing substances:** All substances* in the Nordic Swan Ecolabelled/chemical product regardless of amount, including additives (e.g. preservatives and stabilizers) from the raw materials. Substances released from ingoing substances (e.g. biocidal active substances generated by preservatives, such as formaldehyde) are also regarded as ingoing substances.

  **N.B. the difference from the definition of substances in the REACH Regulation (EC) No 1907/2006. Whereas a REACH substance encompasses a chemical element or compound as well as its stabilising additives and process impurities, a substance here refers to each of the constituents separately. The constituents of a UVCB substance (Unknown or Variable composition, Complex reaction products or of Biological materials) are also regarded separately, and all known constituents must be regarded.*

- **Impurities:** Trace levels of pollutants, contaminants and residues from production, incl. production of raw materials, that remain in the chemical product in concentrations ≤ 100 ppm (≤ 0.0100 w%). For formaldehyde other than as a biocidal active substance and for arylamine, the corresponding concentration is ≤ 25 ppm (≤ 0.0025 w%).

  *Examples of impurities: Background environmental pollutants from feedstock, as well as contaminants and residues from production such as reactants (incl. monomers), reagents, catalysts, by-products, scavengers, detergents for production equipment, carry-over from other or previous production lines.*

- **Impurities in the raw materials** in concentrations ≥ 10 000 ppm (≥ 1.0000 w%) are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled/chemical product.

If the raw material contains impurities that are listed under excluded substances or has any of the classifications mentioned in this appendix, write the amount in the box at the end of the appendix. The manufacturer of the Nordic Swan Ecolabelled product is responsible for calculating compliance with the requirements of the criteria.

Please list the ingoing substances in the raw material in the table below.

| Name of raw material ingredient | Chemical name | CAS No. | Amount in weight % | Function of the raw material/ingredient | Suggested DID No. |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Please note that:**

The DID-list (Detergents Ingredients Database) is available on the Nordic Ecolabelling websites.

Substances defined as surfactants according to the Detergent Regulation (EC) No 648/2004, must always be reported with the function “surfactant.”

The information provided in this declaration is shared internally with the Nordic Ecolabelling certification personnel for the purpose of evaluating license applications.

| O4 Certified raw materials from oil palms | Yes | No |
|---|---|---|
| **Mark your answers with an X in the relevant column.**<br>If the answer to all the questions below is No, put an X in the column to the right. | | |
| **Does the raw material contain palm oil or palm kernel oil?**<br>This includes by-products, residues, and waste fractions from palm oil industries, such as palm fatty acid distillate and palm effluent sludge.<br><br>If yes, is this palm oil/palm kernel oil RSPO certified?<br><br>What is the traceability level?<br>Mark below and state the certificate/licence number: | | |
| No traceability | | |
| Identity Preserved | | |
| Segregated | | |
| Mass Balance | | |
| **Add O5 Classification of ingoing substances** | **Yes** | **No** |
| **Does the raw material contain ingoing substances or impurities classified with any of the hazard codes below, including all classification variants (e.g. H350 also includes H350i)?**<br>If the answer to all the classifications below is No, put an X in the column to the right. | | |
| H420 – Ozone | | |
| H372 – STOT RE 1 | | |
| H334 – Resp. Sens. 1, 1A or 1B | | |
| H317 – Skin Sens. 1, 1A or 1B | | |
| H350 – Carc. 1A or 1B | | |
| H351 – Carc. 2 | | |
| H340 – Muta. 1A or 1B | | |
| H341 – Muta. 2 | | |

| | | |
|---|---|---|
| H360 – Repr. 1A or 1B | | |
| H361 – Repr 2 | | |
| H362 – Lact. | | |
| EUH380 – ED HH 1 | | |
| EUH381 – ED HH 2 | | |
| EUH430 – ED ENV 1 | | |
| EUH431 – ED ENV 2 | | |
| EUH440 – PBT | | |
| EUH441 – vPvB | | |
| EUH450 – PMT | | |
| EUH451 – vPvM | | |
| **O6 + O7: Excluded substances** | **Yes** | **No** |
| **Does the raw material contain any of the following substances?** | | |
| Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), butylated hydroxytoluene (BHT, CAS No. 128-37-0), alkylphenol ethoxylates (APEOs) and other alkylphenol derivates (APD)) | | |
| Aminopolyphosphonates | | |
| Amphoacetates derivatives of N-hydroxyethyl imidazolines (EC No. 271-792-5, 271-794-6, 931-291-0, | | |
| Aromatic solvents and carriers, incl. chlorotoluenes, chlorophenols and chlorobenzenes<br>Solvents are defined in Directive 1999/13/EC: Organic substances with a vapour pressure of at least 0.01 kPa at 20 °C | | |
| Benzalkonium chloride (CAS No. 8001-54-5) | | |
| Bisphenols and bisphenol derivatives, defined as 34 bisphenols identified by ECHA for further EU regulatory risk management due to known or potential endocrine disruption or reproductive toxicity. EC/List No. 201-245-8 (BPA), 201-025-1 (BPB), 401-720-1 (4,4'-Isobutylethylidenediphenol), 216-036-7 (BPAF) and its 8 salts (278-305-5; 425-060-9; 443-330-4; 468-740-0; 469-080-6; 479-100-5; 943-265-6; 947-368-7), 201-250-5 (BPS), 201-240-0 (BPC), 204-279-1 (TBMD), 201-618-5 (6,6'-di-tert-butyl-4,4'-butylidenedi-m-cresol), 242-895-2, 248-607-1, 405-520-5 (D8), 217-121-1 (DAB), 227-033-5 (TMBPA), 210-658-2 (BPF), 411-570-9, 277-962-5 (contains BPS, 500-086-4 (contains BPA), 500-263-6 (contains BPA), 500-607-5 (contains BPA), 701-362-9, 904-653-0 (contains BPA), 908-912-9 (contains BPF), 926-571-4 (contains BPA), 931-252-8 (contains BPA), 941-992-3 (contains BPS), 943-503-9 (contains BPA) | | |
| Boric acid, borates, and perborates | | |
| Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts | | |
| Halogenated organic compounds | | |
| Isothiazolinones (e.g. methylisothiazolinone (MIT), CAS No. 2682-20-4, metylchloroisothiazolinone (CMIT), C(M)IT/MIT (3:1), CAS No. 55965-84-9, CAS No. 26172-55-4, benzisothiazolinone (BIT), CAS No. 2634-33-5, octylisothiazolinone (OIT), CAS No. 26530-20-1 and dichlorooctylisothiazolinone (DCOIT), CAS No. 64359-81-5) | | |
| Linear alkylbenzene sulphonates (LAS) | | |
| Methyldibromo glutaronitrile (MG), CAS no. 35691-65-7 | | |
| Microplastics (requirement O7)<br>Microplastics are synthetic polymer microparticles as defined in REACH Regulation ((EC) No 1907/2006), Annex XVII, Entry no. 78:<br>Synthetic polymer microparticles: polymers that are solid, and which fulfil both of the following conditions: | | |

| | | |
|---|---|---|
| a) are contained in particles and constitute at least 1% by weight of those particles; or build a continuous surface coating on particles.<br>b) at least 1% by weight of the particles referred to in point (a) fulfil either of the following conditions:<br>(i) all dimensions of the particles are equal to or less than 5 mm.<br>(ii) the length of the particles is equal to or less than 15 mm and their length to diameter ratio is greater than 3.<br>The following polymers are excluded from this designation:<br>• polymers that are the result of a polymerisation process that has taken place in nature, independently of the process through which they have been extracted, which are not chemically modified substances.<br>• polymers that are biodegradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].<br>• polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].<br>• polymers that do not contain carbon atoms in their chemical structure. | | |
| Nanomaterials/-particles<br>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:<br>a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm<br>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<br>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 | | |
| Nitro musks and polycyclic musk compounds | | |
| NTA (nitrilo triacetic acid, CAS-no. 139-13-9), and its salts | | |
| Organic chlorine compounds, hypochlorites and hypochlorous acid | | |
| PBT and vPvB as defined in REACH Annex XIII, including those under ECHA PBT assessment https://echa.europa.eu/da/pbt | | |
| Per- and polyfluoroalkyl substances (PFAS)<br>PFAS is defined as any substance that contains at least one fully fluorinated methyl (CF3-) or methylene (-CF2-) carbon atom (without any H/Cl/Br/I attached to it) | | |
| Phosphate, phosphonate, phosphonic acid and phosphoric acid | | |
| Phthalates | | |
| Potential or identified endocrine disruptors, listed in any of the following "Endocrine Disruptor Lists" List I; II and III | | |
| Quaternary ammonium compounds, which are not readily aerobic biodegradable such as DTDMAC (CAS No. 61789-80-8), DSDMAC (CAS No. 107-64-2), DHTDMAC (CAS No. 61789-72-8) and DADMAC (CAS No. 7398-69-8) | | |
| Siloxanes | | |
| Silver, colloidal silver, or nanosilver | | |
| Substances on the REACH Candidate list of SVHC substances https://www.echa.europa.eu/candidate-list-table | | |
| Volatile organic compounds (VOC) | | |
| **O9 Fragrances** | **Yes** | **No** |
| Does the raw material contain fragrances (incl. plant extracts)?<br>If yes, please answer the following questions about fragrances: | | |
| Have fragrances been added in line with IFRA guidelines? (IFRA, International Fragrance | | |

| | | |
|---|---|---|
| Association, www.ifraorg.org/) | | |
| Does the fragrance contain BHT? (see O6) | | |
| Does the raw material contain fragrance allergens that are judged to be sensitising with the hazard statement H317 and/or H334, or which are listed in Annex III of the Cosmetic Regulation?<br>If yes, please send in perfume specifications. | | |
| Does the raw material contain the fragrance allergens oak moss extract (Evernia prunastri, CAS No. 90028-68-5) or tree moss extract (Evernia furfuracea, CAS 90028-67-4)? | | |
| **O10 Preservatives** | **Yes** | **No** |
| Does the raw material contain preservatives?<br><br>If yes, please state name and log Kow/BCF:_____ | | |
| **O12 Long-term environmental effects** | **Yes** | **No** |
| Does the raw material contain substances classified as environmentally hazardous with H410, H411 and H412?<br>If yes, please state the amount (% by weight) per classification, and for H410 also state the M-factor:<br><br>_____ | | |

If the answer to any of the above questions is Yes, please provide the following information for each relevant substance: CAS No. (where possible), chemical name, concentration (in ppm, % by weight or mg/kg). Also state whether the substance is present as an ingoing substance or as an impurity.

| |
|---|
| |

If the raw material composition changes, a new declaration confirming compliance with the requirements must be submitted to Nordic Ecolabelling.

| | |
|---|---|
| **Place and date** | **Company name** |
| **Responsible person** | **Signature of responsible person** |
| **Telephone** | **Email** |

# Appendix 3 Analyses, test methods, and calculations

### 1A Requirements on the analysis laboratory for testing of ecotoxic effects, biodegradability, and inhalable aerosols

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

### 1B Requirements on the analysis laboratory for performance

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

The applicant's own laboratory, and external testing institutes that do not meet EN ISO/IEC 17025 or have official GLP status, may be approved to carry out performance tests. In this case, the following conditions must be met:

- The organisation must be ISO 9001 certified or certified according to the International Features Standards (IFS) standard for Household and Personal Care.
- The test laboratory must be covered by the certification, and the performance test must be included in the quality management system.
- Nordic Ecolabelling is to be given access to all the raw data from the performance test.

The applicant's own laboratory may be approved to carry out performance tests even if the test laboratory and the performance test are not covered by ISO 9001 or IFS standard for Household and Personal Care certification. The following conditions must be met:

- The organisation must have a quality assurance system, an ISO 9001 or IFS standard for Household and Personal Care certification. The laboratory and the performance test do not have to be within the certification, but it needs to be described in that system.
- Nordic Ecolabelling is to be given access to all the raw data from the performance test.
- The laboratory must document that the test method used is aimed at differentiating between different cleaning products, and that the results achieved are reproducible.
- It must be possible for Nordic Ecolabelling to come and observe the performance of a test.

### 2 Approved test methods

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

### 3 Aquatic toxicity

For acute aquatic toxicity, test methods no. 201, 202, 203, and 212 in the OECD Guideline are used. For chronic aquatic toxicity test methods no. 210, 211, 215 and 229 in the OECD Guideline are used. OECD 201 can be used as chronic test if chronic endpoints are chosen.

### 4 Bioaccumulation

Unless otherwise proven, a substance is considered bioaccumulating if tested for bioaccumulation on fish according to method OECD 305 A-E or OECD 321 and its bioconcentration factor (BCF) is >100. If no BCF value has been determined, a substance is considered bioaccumulating if its logKow value ≥ 3.0 according to method 107, 117 or 123 in the OECD Guidelines for the Testing of Chemicals or equivalent method. If the maximum measured BCF ≤ 100, the substance is not considered bioaccumulating even if logKow ≥ 3.0.

OECD test method 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.

### 5 Aerobic biodegradability

For readily aerobic biodegradability test method no. 301 (A to F), 306 or 310 in the OECD Guidelines are used. For potential (inherently) biodegradability test method no. 302 (A to C) in the OECD Guidelines are used.

Other scientifically accepted test methods may also be used. The test results of such equivalent methods must be evaluated by an independent body.

### 6 Anaerobic biodegradability

For anaerobic degradability test method no. 311 in the OECD Guidelines, ISO 11734, or ECOTOC no. 28 (June 1988) are used.

Substances that are not surfactants and which are not included in the DID-list or for which data is missing on DID-list list may be exempt from the requirements on anaerobic degradability if they fulfil all the following requirements:

- Not toxic to aquatic organisms (NOEC/ECx > 0.1 mg/l or E/LC50 > 10 mg/l)
- Readily aerobically biodegradable
- Have low adsorption (A < 25%) or high desorption (D > 25%) or are not bioaccumulating

Testing for adsorption/desorption can be carried out under OECD guidelines 106 or under ISO 18749 "Water quality - Adsorption of substances on activated sludge - Batch test using specific analytical methods”.

### 7 DID list

The DID-list, Detergent Ingredient Database has been developed to facilitate the ecolabel application process and is a tool to rank chemicals and thus make it easier for licence

holders and producers to choose less environmentally harmful chemicals in their products. The list contains information on toxicity and degradability of several substances that are used in chemical products.

The substances on the DID-list cannot be seen as an overview of substances that are contained in ecolabelled products, and the DID-list cannot be used to document the toxicity of the individual substances in connection with the classification rules. Here, information from safety data sheets, literature or the raw materials producer must be used.

The DID-list can be obtained from the ecolabelling organisation or the website of the respective country. If a substance is not included on the DID-list, or biodegradability data is missing, the methods described in part B of the DID-list must be used. For these criteria, the DID-list dated 2023 or later versions apply.

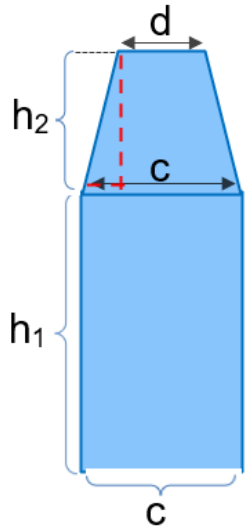
## 8 Calculation of coverage of label on plastic packaging

Below follows a description of how the calculation of coverage of labels on plastic containers should be carried out. The calculations can be done in Nordic Ecolabelling's calculation sheet for packaging.

Calculation for a non-cylindrical bottle:

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 the packaging are of different size, the maximum percentage shall be fulfilled for each side separately.

The illustration below shows an example of the measurements involved in the calculation of the total area of a non-cylindrical container:




The following formulas can be used to calculate the area:

$$Area\ A_1 = c \cdot h_1$$

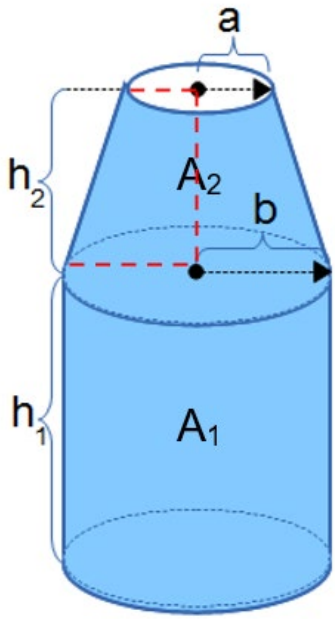
$$Area\ A_2 = \frac{h_2 \cdot (c + d)}{2}$$

$$Total\ area\ A = A_1 + A_2$$

Calculation for a cylindrical bottle:

For a cylindrical container, the calculation shall be based on the three-dimensional profile excluding the bottom and top of the container.

The illustration below shows the measurements involved in the calculation of the total area of a cylindrical container:




The following formulas can be used to calculate the area:

$$Area\ A_1 = 2 \cdot \pi \cdot b \cdot h_1$$

$$Area\ A_2 = \pi \cdot (b + a) \cdot \sqrt{h_2^2 + (b - a)^2}$$

$$Total\ area\ A = A_1 + A_2$$

# Appendix 4 Declaration from the manufacturer of the primary packaging including closures

To be used in conjunction with an application for a licence for the Nordic Ecolabelling of cleaning products. Ecolabelling of cleaning products.

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 (bottle, pouch, closure, label)** |
| **Packaging material (type of plastic: PE, PET, PP; cardboard; etc.)** |

| **Plastic packaging (includes bottle)** | **Yes** | **No** |
|---|---|---|
| Is the plastic packaging white or transparent? (O17) | | |
| Is the plastic packaging coloured/tinted with Carbon black? (O17) | | |
| Has carbon black been added to the plastic packaging? (O17)<br>If so, can the NIR sensor read and sort the plastic packaging into the correct plastic fraction?<br><br>Please submit test results or other documentation showing correct reading/sorting. | | |
| Is there metal coverings or metal seals or other metal parts? (O17) | | |
| Are fillers used? (O17)<br>If yes, state concentration and density of the plastic: _____ | | |
| Does the packaging contain post-consumer recycled/regrind material (PCR)? (O20) | | |
| If yes, what is the recycling percent?<br>_____ | | |
| **Paper or cardboard or packaging** | **Yes** | **No** |
| Does the paper/carton/packaging contain postconsumer regrind/recycled material (PCR)? (O20)<br>If yes, what is the recycling percent?<br>_____ | | |

| **Label and shrink film label** | **Yes** | **No** |
|---|---|---|
| Please specify the label material and density:<br>_____ | | |
| Is there PS or PVC or plastics based on other types of halogenated plastics present in the label? (O18) | | |
| Are there metal parts in the label such as metallized labels? (O18) | | |
| Is the printing ink used compliant with EuPIA's exclusion policy*?<br><br>*https://www.eupia.org/wp-content/uploads/2024/03/20240313-EuPIA_Exclusion_Policy_for_Printing_Inks_and_Related_Products_-March-2024_6th-Edition-v1-1.pdf | | |
| Does the label contain post-consumer recycled/regrind material (PCR)? (O20) | | |
| If yes, what is the recycling percent?<br>_____ | | |
| **Plastic packaging: pouches** | **Yes** | **No** |
| Is the packaging of monomaterial, i.e. not laminates with different material layers (O19)? | | |
| Is the pouch white or transparent (O19)? | | |
| Is the pouch tinted/coloured with Carbon Black (O19)? | | |
| Has carbon black been added to the pouch? (O19)<br>Has carbon black been added to other elements than text and pictogram?<br>If so, can the NIR sensor read and sort the pouch into the correct plastic fraction?<br>If yes, please submit test results or other documentation showing correct reading/sorting. | | |
| Are fillers used (O19)?<br>If yes, state concentration and density of the plastic: _____ | | |
| Is there a barrier coating of EVOH (Ethylene vinyl alcohol) of max 5% of the weight of the packaging (O19)? | | |
| Does the packaging contain postconsumer recycled/regrind material (PCR)? (O20)<br>If yes, what is the recycling percent? _____ | | |
| **Closure (includes cork / lid and mounted dosing devices / pumps)** | **Yes** | **No** |
| Is there PS (Polystyrene) or PVC or plastics based on other types of halogenated plastics present in the closure? (O17 & O19) | | |
| Is the closure black? (O17 & O19) | | |
| Has carbon black been added to the closure? (O17 & O19)<br>If so, can the NIR sensor read and sort the closure into the correct plastic fraction?<br><br>Please submit test results or other documentation showing correct reading/sorting. | | |
| Are there metal parts in the closure, such as metal in foam trigger? (O17)<br>What is the density (g / cm3) of the closure? _____ | | |
| Does the closure contain post-consumer recycled/regrind material (PCR)? (O20) | | |
| If yes, what is the recycling percent?<br>_____ | | |

| | | |
|---|---|---|
| If the closure is a trigger to a foam/spray product:<br>Does it have a permanent aerosol reducing foaming nozzle? (O21) Permanent means that it is fixed in foaming position.<br>Please describe the ingoing materials (in percentage) in the trigger:<br><br>_____<br><br>_____<br><br>_____ | | |

## Signature of the packaging producer

| | |
|---|---|
| **Place and date** | **Company name/stamp** |
| **Responsible person:** | **Signature of responsible person** |
| **Telephone** | **E-mail** |

# Appendix 5 Laboratory Test

This appendix contains a description of how the performance test of cleaning products is to be carried out and how the result is to be documented to Nordic Ecolabelling.

### Dose

The lowest specified dosage for normal soil of the test product and the reference product respectively shall be used for the performance test.

### The reference product

The reference product must be recently purchased and must be a product intended for the same area of use (kitchen, sanitary, window) and belong to the same product category (professional, consumer, RTU) as the product. The reference product must be a product that is well-established/well-known in the market.

The manufacturer can compare the product for which they apply the Nordic Swan Ecolabel with a self-produced product if the previously stated conditions are met.

Microorganism based products are to be compared to an equivalent product without microorganisms.

### Surfaces

The surfaces on which the products are tested must be relevant to the area of use in respect of which the product is marketed. If other surfaces have been chosen must this be explained. The surfaces should be cleaned before taking the first measurement, to reduce background variability. Then the soil can be applied.

### Soil

The soil mixture must be relevant to the product's intended area of use according to the following table 1. Products marketed for several different areas of use or other types of soil should be tested on all the major types of soil that products market with, including soil types, that may not be listed in the table (for example, protein and starch). The soil mixture must be as follows: relevant to the area of use of the product – homogenous – based on well-described and internationally available substances.

**Table 1 Soil(s)**

| Product/Area of use | Soil(s) |
|---|---|
| Sanitary cleaner | Lime soap and limescale (calcium deposits) |
| WC cleaner | Limescale (calcium deposits) |
| All-purpose cleaner and kitchen cleaner | Fat |
| Wash polish/wash-and-wax care products | Fat |
| Window and glass cleaner | Fat (fingerprints) and particulate matter (dust and/or soot). |
| Oven cleaners | Burned. The dirt should contain a mixture of fats, proteins and carbohydrates. |
| Outdoor cleaners | Soot, fat, oil, asphalt (bitumen), biological material* |
| Products containing micro-organisms | Soils relevant to the area of use above. Also, test for degradation of protein, starch, fat/vegetable oil (see requirement O11) |

**Note that products claiming biocidal effects such as limiting or hindering the growth of biological material (algae, mould, bacteria) cannot be Nordic Swan Ecolabelled, see section "What can carry the Nordic Swan Ecolabel?". This requirement refers to the ability to wash off biological material.*

**Method of cleaning**

The method of cleaning shall be relevant to the product type. The test shall be performed for the soil types specified in Table 1 that are relevant to the product's area of use.

De-scaling performance can be determined by gravimetric analysis. Fat-removing performance is determined by reflectance. The removal of particulate can be determined by gravimetric analysis or reflectance.

**Description of the test**

The same number of repetitions shall be performed for the test product, reference product, and water (at least 10 per product). One batch of soil that is sufficient to all tests shall be used. The soil shall be applied to at least 30 test pieces of a relevant material. Refer to item 3 “Surfaces”. Following this, the tests shall be performed using the test product, reference product, and water.

The test shall be performed using a random selection of soiled test pieces, i.e. at least 10 pieces shall be chosen at random for the test product, the same number for the reference product, and the same number for the water test.

The reflectance of all plates must be measured before the soil is applied, after the soil has been applied, and after washing.

Reflectance can also be determined visually if it is clearly explained how this assessment is conducted in a reproducible manner.

Effectiveness, EFF, is calculated separately for each plate and recorded in a table.

**Calculation of the wash effectiveness index (EFF)**

The wash effectiveness index is calculated using the following formula:

**$EFF = (R_c - R_b) / (R_a - R_b)$**

$R_a$ = Reflectance before soiling (i.e. on a clean plate)

$R_b$ = Reflectance after soiling

$R_c$ = Reflectance after washing

This is performed for each individual parallel of the product, the reference product, and water.

The following must also be calculated:

$EFF_p$ = Average EFF value for the product undergoing testing

$EFF_r$ = Average EFF value for the reference product

$EFF_w$ = Average EFF value for water

**Requirement level**

Cleaning effects must be demonstrated in accordance with one of the following requirements:

Alternative A:

It must be shown with a 95% unilateral confidence interval that the test product has a wash effectiveness that is greater than or equal to that of the reference product,

or

Alternative B:

$EFF_p \geq EFF_r$

The following cleaning effects must be shown per product category:

**Table 2 Cleaning effects per product category**

| Product/Area of use | Cleaning effect(s) |
|---|---|
| Sanitary cleaner | Removal of calcium and fat |
| WC cleaner | Removal of calcium |
| All-purpose cleaner and kitchen cleaner | Removal of fat |
| Wash polish/wash-and-wax care products | Removal of fat |
| Window and glass cleaner | Removal of fat and particulates |
| Oven cleaners | Removal of burned soil including fats, proteins and carbohydrates |
| Outdoor cleaners | Removal of soot, fat, oil, asphalt (bitumen) and biological material* |
| Products containing micro-organisms | Removal of soils relevant to the area of use above. Also, test for degradation of protein, starch, fat/vegetable oil (see requirement O11) |

**Wash effectiveness better than water**

All product tests shall also demonstrate that the results are better than water alone.

Irrespective of the method of evaluation (alternative A or B), the following shall be fulfilled:

$EFF_p > EFF_w$

**Prolonged effectivity test for products containing micro-organisms**

In addition to the applicable test for efficiency, it should also be demonstrated that products containing micro-organisms degrade protein, starch, and fat/vegetable oil continuously over a prolonged period as claimed by the manufacturer, otherwise, 7 days (see requirement O11). Daily measurements should be recorded for the following:

- Protein - degradation of proteins shown as degradation on standard casein agar medium or through other scientifically acknowledged medium displaying protein degradation.
- Starch - degradation of starch shown as degradation on standard starch agar or through other scientifically acknowledged medium displaying starch degradation.
- Fat and/or vegetable oil: degradation shown as degradation on “Spirit Blue”-agar medium or through other scientifically acknowledged medium.

**Documentation**

The entire test shall be reported in accordance with the framework specified above. The report must contain the following points:

- The formulation number providing linkage to the product name and the version of the recipe that is specified in the licence application.
- The applicant shall state the dose of the product and of the reference product.
- The applicant shall answer the following:
  a) How long has the reference product been on the market?
  b) What areas of application do the product and the reference product have in common?
  c) Why was this product chosen as the reference product?
  d) What type of surface was used in the test?
  e) Why is this surface relevant?
  f) Is the product gentle on this type of surface?
- State the formula for the soil
- State why the composition of the soil is relevant to the area of use of the product.
- Describe the method of cleaning and how this method is relevant.
- Describe how soiling, washing and measurement/detection were performed.
- Specify raw data from the weighing and values from the reflectance measurements.
- All raw data from all tests shall be submitted.
- Wash effectiveness EFF, stated to two significant figures, is calculated separately for each surface. An average is then calculated for the test product, reference product and water respectively.
- Calculations according to requirement level alternative A or B demonstrating that the requirement is fulfilled.
- The cleaning performance of the test product in comparison to water shall be specified.
- Final results based on this raw data (and, if applicable, a statistical evaluation of the data).
- Only for products containing micro-organisms: documentation of degradation over time of protein, starch, and fat/vegetable oil

# Appendix 6 User test: Information and requirements

Professional cleaning products can fulfil the performance test requirement with a laboratory test or a user test. This appendix describes the way in which a user test for a professional cleaning product is to be performed.

Consumer products must be tested in a laboratory, see Appendix 5. Products containing micro-organisms must demonstrate residual cleaning effects via the laboratory test as instructed in Appendix 5.

These instructions apply to all professional cleaning product types except wash polish/wash-and-wax care products. The wash polish/wash-and-wax product user test does not use a reference product and therefore has separate user test instructions in Appendix 7.

The purpose of the test is to demonstrate whether the test product for which a Nordic Swan Ecolabel licence is sought is as good as or better than a comparative product. The test must also demonstrate whether the test product is abrasive to or otherwise harms the surfaces on which it is marketed for use.

**Quality requirements**

At least 80% of the test persons must assess the product to be as good as or better than the reference product to fulfil the performance test.

**Test individuals**

Test individuals must be professional cleaning staff. At least ten professional users shall test the product. The ten individuals shall be randomly chosen and shall come from at least five different companies/organisations/institutions.

**The reference product:**

The test product must be compared with the product normally used by the user. The reference product must not be the same as the test product. The test product and the reference products may be produced by the same manufacturer.

Micro-organism based products are to be compared to an equivalent product without micro-organisms.

**Performance of the test:**

The test must be performed on the type(s) of surface relevance in relation to the recommendations on the product label.

The dosage used must be the minimum dosage specified on the label for normal soil. I.e. if the normal dosage of the label is specified as an interval, the lowest* quantity in this interval must be used. Likewise, the dosage of the comparative reference product must be the lowest recommended dosage for normal soil.

*If other dosage is used than the lowest in the interval this needs to be clearly motivated.

The duration of the test period must be sufficient for the test product to be used at least five times by the test user on the same place.

**Performance questionnaire**

The questionnaire for the user test is found in this appendix. Each test individual must complete all questions on the questionnaire. In the table for the assessment of the product, all general questions should be answered as well as any questions that are specific to the type of cleaner tested. One questionnaire shall be completed per product per user.

Responses shall be tabulated by the applicant in the "Summary of the results" form in this appendix.

The recipe of the test product at the time of the performance test must be the same as that submitted in the application to Nordic Ecolabelling.

**Performance test by professional users of cleaning products**

*To be completed by the professional cleaning staff who is testing the product.*

**Information about the test**

Name of test product (= the new product): _____

Dosing of test product: _____

Name of reference product (= the product that is normally used):

_____

Dosing of reference product: _____

Types of surfaces on which the test product is used. Specify the material (e.g. stone, tiles, linoleum, wood, painted surface, stainless steel).

☐ Tables: _____

☐ Fixtures/furnishings: _____

☐ Walls: _____

☐ Ceilings: _____

☐ Wash basin: _____

☐ Bathroom cabinets: _____

☐ Bathroom tiles: _____

☐ WC: _____

☐ Floors - state type: (stone, tile, terrazzo, or other): _____

☐ Textile floors: _____

☐ Windows

☐ Mirrors

☐ Other glass surfaces: _____

☐ Outdoor wooden terrace: _____

☐ Outdoor stone floor: _____

☐ Outdoor wooden facade: _____

☐ Outdoor stone facade: _____

☐ Other: _____

**Test period**

Start date: _____ End date: _____

How many times was the test product used on the same surface during the specified test period?

_____

How long have you been using the comparative product? _____

How frequently (approximately) do you use the comparative product? _____

**Use**

How has the product been used (manually, floor machine, mop, etc.)? _____

_____

Where has the product been used? In which areas of use has the test been performed (kitchen, bathroom, school, office, restaurant, hotel, outdoors)?

_____

_____

Which types of soils have been most problematic in this area (e.g., calcium deposits, soap, oil, fat, asphalt, soot, biological material)?

_____

**Assessment of the product**

On completion of the tests, the test product shall be compared to the reference product and assessed using the following table. Answer all the general questions plus any of the questions for specific cleaner types that apply.

| | **Poorer** | **As good as** | **Better** |
|---|---|---|---|
| **General questions (answered for all cleaner types):** | | | |
| How do you consider the test product's ability to remove soils compared to the reference product?' | | | |
| How do you consider the test product's gentleness to the cleaned surface compared to the reference product?' | | | |
| How effective do you consider the test product in comparison to the reference product? | | | |
| **WC / Sanitary cleaners** | | | |
| In the case of acid products: The ability of the test product to remove calcium deposits is: | | | |

| | | | |
|---|---|---|---|
| In the case of alkaline products: How do you consider the ability of the test product to prevent calcium deposits is compared to the reference product? | | | |
| **Window / glass cleaners** | | | |
| How do you rate the test product's ability to remove dirt (mainly fine particles) compared to the control product? | | | |
| How do you rate the test product's ability to remove grease (mainly finger marks) compared to the control product? | | | |
| Does the test product leave streaks or residue on the surface to a greater extent than the control product? | | | |
| **Products with microorganisms** | | | |
| How do you consider the products residual cleaning effects, i.e., the ability to degrade fat, starch and protein continuously over a prolonged period as claimed by the manufacturer, otherwise, 7 days? | | | |
| **Outdoor cleaners** | | | |
| How do you rate the test product's ability to remove dirt such as oil, fat, soot, asphalt and biological material compared to the reference product? | | | |
| **Textile floor cleaners** | | | |
| How do you consider the test product's ability to remove stains on the surface compared to the reference product? | | | |
| How do you consider the test product’s gentleness to the cleaned surface (for example colour fastness, moist, wear on the carpet) compared to the reference product? | | | |

Comments: _____

_____

_____

_____

### Information on the user site

The cleaning test and the associated assessment were performed by:

Company name: _____

Company address: _____

Contact person: _____

Telephone: _____

E-mail: _____

Further description of the site at which the cleaning test was performed:

_____

If questions regarding the test arise, Nordic Ecolabelling will first contact the producer of the cleaning product but may also contact test individuals.

### Summary of the results for user test of cleaning products

*To be completed by the applicant for a Nordic Swan Ecolabel licence.*

Date: _____

Name of test product: _____

Description of the selection of test individuals: _____

_____

_____

_____

Were all individuals carrying out the user test professional cleaning staff? (Note: this is a requirement.) _____

How many questionnaires were sent out? _____

How many responses were received? _____

### Table for the collation of answers

The results from the questionnaires shall be collated in the appropriate table below. Results are given in % of the total number of responses. Collate answers for all the general questions plus any answers for specific cleaner types that apply.

| | **Poorer (%)** | **As good as (%)** | **Better (%)** |
|---|---|---|---|
| **General questions (answered for all cleaner types):** | | | |
| How do you consider the test product's ability to remove soils compared to the reference product?' | | | |
| How do you consider the test product's gentleness to the cleaned surface compared to the reference product?' | | | |
| How effective do you consider the test product in comparison to the reference product? | | | |
| **WC / Sanitary cleaners** | | | |
| In the case of acid products: The ability of the test product to remove calcium deposits is: | | | |
| In the case of alkaline products: How do you consider the ability of the test product to prevent calcium deposits is compared to the reference product? | | | |
| **Window / glass cleaners** | | | |
| How do you rate the test product's ability to remove dirt (mainly fine particles) compared to the control product? | | | |
| How do you rate the test product's ability to remove grease (mainly finger marks) compared to the control product? | | | |
| Does the test product leave streaks or residue on the surface to a greater extent than the control product? | | | |
| **Products with microorganisms** | | | |
| How do you consider the products residual cleaning effects, i.e., the ability to degrade fat, starch and protein continuously over a | | | |

| | | | |
|---|---|---|---|
| prolonged period as claimed by the manufacturer, otherwise, 7 days? | | | |
| **Outdoor cleaners** | | | |
| How do you rate the test product's ability to remove dirt such as oil, fat, soot, asphalt and biological material compared to the reference product? | | | |
| **Textile floor cleaners** | | | |
| How do you consider the test product's ability to remove stains on the surface compared to the reference product? | | | |
| How do you consider the test product’s gentleness to the cleaned surface (for example colour fastness, moist, wear on the carpet) compared to the reference product? | | | |

Comments_____

_____

_____

_____

## Signature of the applicant

| | |
|---|---|
| **City and Date** | **Company** |
| **Name of contact person** | **Signature by contact person** |
| **Telephone** | **E-mail** |

# Appendix 7 User test for wash polish/wash-and-wax care products

This section applies only to professional wash polish/wash-and-wax care products.

(See Appendix 6 for user test instructions and forms for all other professional cleaning products.)

Products containing micro-organisms must demonstrate residual cleaning effects via the laboratory test as instructed in Appendix 5.

**The following requirements apply**

- The product must be used by at least 10 users for 3 months.
- The product must be used with satisfactory results on the types of substrates for which the maintenance product is intended.
- The traffic conditions under which the products are to be tested must correspond to normal traffic in corridors in large office buildings.

In the user test, the user allocates points for various properties, with 5 being the highest score and 1 the lowest score. No reference product is required for this test.

**Test individuals**

Test individuals must be professional cleaning staff. At least ten professional users shall test the product. The ten individuals shall be randomly chosen and shall come from at least five different companies/organisations/institutions.

**The types of floors that must be tested**

- The test must include all of the floor types for which the product is marketed. This means at least one user per floor type.

**Requirements applicable to the individual parameter**

- A score of 1 must not be awarded by a user for any parameter.

**Overall assessment of the product**

- A score of at least 3 must be given by at least 80% of all users.
- A score of 1 must not be awarded by any of the users.

For each product, the individual parameters must be assessed separately (test parameters). In the case of non-standard products, Nordic Ecolabelling may permit the user’s report to add a further point’s assessment for other overall properties. The table below shall be used.

## Performance test by professional users of wash polish/wash-and-wax care products

*To be completed by the professional cleaning staff who is testing the product.*

Instructions:

- Test the product on floors under normal conditions (normal traffic, typical soiling, etc.) for 3 months
- Complete the table below with 5 being the highest score and 1 the lowest score. Please answer all questions.

**Table A. Wash polish/wash-and-wax care product test results**

| Product type | Floor type | Test parameter | Performance (1-5, where 5 is best) |
|---|---|---|---|
| Name of Wash polish/ wash-and-wax care product: | Types of floor for which the product is intended (to be completed by the manufacturer): | **Application**<br>How is the product to apply/distribution capacity?<br><br>Foaming: Is the foam level low when applying the product? Alternatively, is the foaming satisfactory during application?<br><br>Odour of the product?<br><br>**Cleaning/maintenance with the product**<br>Ability to avoid re-soiling of the floor?<br>Ability to maintain the gloss of the floor?<br><br>Slip resistance?<br><br>Water resistance?<br><br>Cleaning ability?<br><br>**Only for products with micro-organisms:**<br>How do you consider the products residual cleaning effects, i.e., the ability to degrade fat, starch and protein continuously over a prolonged period as claimed by the manufacturer, otherwise, 7 days? | _____<br><br>_____<br><br>_____<br><br>_____<br>_____<br><br>_____<br><br>_____<br><br>_____<br><br>_____ |
| Overall assessment of the product (other parameters such as removal, drying time before next coat, wear resistance etc. can also be included here): | | | _____ |

| |
|---|
| Test period: |
| Floor type/substrate: |
| Are polishing machines used? |
| Comments on overall assessment: |

**Information on the user site**

The cleaning test and the associated assessment were performed by:

Company name: _____

Company address: _____

Contact person: _____

Telephone: _____

E-mail: _____

Further description of the site at which the cleaning test was performed:

_____

If questions regarding the test arise, Nordic Ecolabelling will first contact the producer of the cleaning product but may also contact test individuals.

**Summary of the results for user test of wash polish/wash-and-wax care products**

*To be completed by the applicant for a Nordic Swan Ecolabel licence.*

Date: _____

Name of test product: _____

Description of the selection of test individuals: _____

_____

_____

_____

Were all individuals carrying out the user test professional cleaning staff? (Note: this is a requirement.) _____

How many questionnaires were sent out? _____

How many responses were received? _____

**Table for the collation of answers**

The results from the questionnaires shall be collated in the appropriate table below:

Results are given in % of the total number of responses.

**Table 1 Summary of results for wash polish/wash-and-wax care products**

| Wash polish/wash-and-wax care products | % replies with following points | | |
|---|---|---|---|
| | 5, 4 or 3 | 2 | 1 |
| How is the product to apply/distribution capacity? | | | |
| Foaming: Is the foam level low when applying the product? Alternatively, is the foaming satisfactory during application? | | | |
| Odour of the product | | | |
| Ability to avoid re-soiling of the surface | | | |
| Durability of the gloss on the floor | | | |
| Slip resistance | | | |
| Water resistance | | | |
| Cleaning effect | | | |
| Only for products with micro-organisms: How do you consider the products residual cleaning effects, i.e., the ability to degrade fat, starch and protein continuously over a prolonged period as claimed by the manufacturer, otherwise, 7 days? | | | |
| Overall assessment of the product (other parameters such as removal, drying time before next coat, wear resistance etc. can also be included here) | | | |

Comments:

## Signature of the applicant

| | |
|---|---|
| **City and Date** | **Company** |
| **Name of contact person** | **Signature by contact person** |
| **Telephone** | **E-mail** |

# Appendix 8 Micro-organism requirement alternative proposal

1. Nordic Ecolabelling welcomes input on whether we should open the possibility of ecolabelling cleaning products aimed for the *consumer market* that contain micro-organisms. Currently (gen. 6), only *professional market* products containing micro-organisms are accepted (see requirement O11).

2. Nordic Ecolabelling also seeks input on the proposed requirement text:

Micro-organisms are only allowed in cleaning products for indoor use. Products with micro-organisms are not allowed in foam/spray products and shall not be used on surfaces in contact with food. Furthermore, cleaning products containing micro-organisms shall not be in a refill format.

Only intentionally added micro-organisms are permitted. Cleaning products containing micro-organisms shall comply with the following conditions:

a) The micro-organisms intentionally added to the product shall belong to a collection of an International Depository Authority (IDA) and be maintained by the culture collection for the authorised period of the Nordic Swan Ecolabelling licence

b) The micro-organisms shall be identified and characterised using whole genome sequence (WGS) analysis according to ""EFSA Guidance on the characterisation of microorganisms used as feed additives or as production organisms"[39]

c) The taxonomic classification of the micro-organisms shall be provided: genus, species, and strain name or code, based on current International Codes of Nomenclature (ICN)

d) The product shall not contain genetically modified micro-organisms

e) The micro-organisms shall belong to both of the following:
   - Risk Group I as defined by Directive 2000/54/EC – biological agents at work[40]
   - The Qualified Presumption of Safety (QPS) list issued by the European Food Safety Authority (EFSA)

f) The product must be controlled to ensure no contamination with unintended micro-organisms (alternatively the product must present low risk of microbial contamination and/or intended use according to the principles of ISO 29621:2017)[41]

g) The following pathogenic micro-organisms shall not be present in any of the strains included in the finished product when screened using the indicated test methods or equivalent:
   - E. coli, test method ISO 16649-3:2015
   - Streptococcus (Enterococcus), test method ISO 21528-1:2017

[39] EFSA Panel on Additives and Products or Substances used in Animal Feed (FEEDAP), G. Rychen, G. Aquilina, G. Azimonti, V. Bampidis, M. de L. Bastos, G. Bories, et al., 'Guidance on the Characterisation of Microorganisms Used as Feed Additives or as Production Organisms', EFSA Journal, Vol. 16, No. 3, March 2018. DOI: 10.2903/j.efsa.2018.5206

[40] Directive 2000/54/EC of the European Parliament and of the Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work (seventh individual directive within the meaning of Article 16(1) of Directive 89/391/EEC) (OJ L 262, 17.10.2000, p. 21). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32000L0054

[41] ISO 29621 Cosmetics Microbiology Guidelines for the risk assessment and identification of microbiologically low-risk products. See https://www.iso.org/standard/68310.htm

- Staphylococcus aureus, test method ISO 6888-1:2021
- Bacillus cereus, test method ISO 7932:2005 or ISO 21871:2006
- Salmonella, test method ISO 6579-1:2017, 6579-4:2025 or ISO 19250:2013
- Any other pathogenic micro-organisms listed in the updated requirements for detergents containing micro-organisms of Regulation (EU) XXXX/XXX[42]

h) The product shall have a standard plate count equal to or greater than 1x10 5 colony-forming units (CFUs) per ml in-use solution in accordance with ISO 4833-1:2014, ISO 21149, or equivalent scientifically recognised method.

i) The minimum shelf life of a detergent containing micro-organisms shall not be lower than 24 months and the microbial count shall not decrease by more than 10 % or 1 log unit/year according to ISO 4833-1: 2014, ISO 21149, or other scientifically acknowledged method for counting the number of micro-organisms. Product stability must be monitored at room temperature with annual microbial counts.

j) Hazard identification of the micro-organisms, in accordance with "EFSA Guidance on the characterisation of microorganisms used as feed additives or as production organisms"[43] and/or the QPS status list, must confirm all the following:

- (i) no acquired antibiotic resistance (across all the 5 classes: aminoglycosides, macrolides, beta-lactams, tetracyclines, fluoroquinolones or other quinolones, according to EUCAST or Nordic AST or other equivalent method)
- (ii) shown not to produce relevant antimicrobial substances
- (iii) non-pathogenic and non-toxigenic properties

k) A safety, hazard and risk assessment of the cleaning product must be performed including all foreseeable conditions of use claimed buy the product. The safety and risk assessment must cover:

- Impacts on human, animal, plant, and environmental health
- Sensitizing potential (dermal and respiratory) in addition to other relevant endpoints
- Vulnerable populations (e.g., immunocompromised, elderly, infants, pregnant women)
- Justification for risk acceptability and uncertainty evaluation
- Any necessary information for end-user to enable safe use

l) Products containing micro-organisms must show a prolonged cleaning effect, as described in Appendix 5, by showing degradation continuously over a prolonged period as claimed by the manufacturer, otherwise, 7 days, of:

- Protein (e.g. via casein agar or other scientifically known medium showing protein degradation)
- Starch (e.g. via starch agar or other scientifically known medium showing starch degradation)
- Fat/vegetable oil (e.g. via "Spirit Blue"- agar or other scientifically known medium showing fat/vegetable oil degradation)

m) Product label and user information must

[42] Regulation (EU) XXXX/ XXX refers to the final adopted version of the revised Detergent Regulation, which is not yet published and therefore lacks a regulation number. Link to proposed draft: https://single-market-economy.ec.europa.eu/publications/com2023217-proposal-regulation-detergents-and-surfactants_en
[43] https://www.efsa.europa.eu/en/efsajournal/pub/5206

- Clearly state that the product contains micro-organisms
- Specify a shelf life
- Provide usage instructions and precautions, particularly from the safety/risk assessment
- Provide a warning to avoid using the product around people that are vulnerable to infection (e.g., immunocompromised, elderly, infants, pregnant women)
- Contain a statement that product shall not be used outdoors or on surfaces in contact with food
- Contain a statement that products shall not be used in foam/spray application

n) Analytical and test verification

- All testing must be conducted by laboratories complying with Appendix 3 (1A and/or 1B)

o) National requirements

- Products sold in Norway must comply with FOR 2004-06-01 nr. 931 when applicable

- a) Certificate of deposition including accession number (IDA).
- b) WGS documentation in line with EFSA section 2.1.1.
- c) Taxonomic details (ICN)
- d) Documentation that the strains are not genetically modified
- e) Documentation demonstrating that the micro-organisms are classified as Risk Group 1.
- e) Proof that the microorganisms belongs to the QPS list issued by EFSA, making reference to the most up to date version
- f) and g) Documentation describing how it is controlled that the product is not unintendedly contaminated with pathogen micro-organisms, or application of ISO 29621:2017 principles.
- h) Documentation of colony forming units per ml in-use solution.
- i) Stability study showing shelf life according to the requirement above.
- j) EFSA QPS list evidence or other documentation demonstrating compliance
- k) Full safety/risk assessment structured as hazard identification, hazard characterisation, exposure assessment and risk characterisation. Justification for risk acceptability and uncertainty evaluation. Information for end-user to enable safe use.
- l) Performance test demonstrating that the product degrades protein, starch, fat and vegetable oil over a prolonged period (can refer to laboratory report for requirement O15)
- m) Product label and marketing material showing for which market and uses the product is designed, plus the application method and safety information on the label.
- n) Documentation on the test laboratory demonstrating compliance with applicable parts of Appendix 3 (point 1A and/or 1B).
- o) Confirmation on compliance with relevant Norwegian legislation, when applicable.

**Background to micro-organism alternative requirement proposal**

Micro-organisms added to microbial containing products may pose a risk to humans, animals and the environment, via hazards such as infection, intoxication, irritation and/or sensitization.[44]

Some manufacturers make cleaning products that contain living micro-organisms as active ingredients. In the draft Regulation on detergents and surfactants, the EU writes:

Micro-organisms have their own biology and response to the environment. Due to their ability to proliferate, there is a clear difference between conventional and microbial detergents. Therefore, the inherent hazards and arising risks are not necessarily of the same nature as those presented by chemicals, especially in relation to the capacity of micro-organisms to persist and multiply in different environments and to produce a range of different metabolites and toxins of potential toxicological significance.[45]

While Nordic Ecolabelling writes this criteria version 7, micro-organisms in detergents are not subject to regulation under the EU Detergents Regulation (EC) No 648/2004. However, harmonised rules governing the safety of micro-organisms in detergents as well as relevant test methods for economic operators to demonstrate compliance with those rules are proposed in the EU draft Regulation on detergents and surfactants.[46]

According to some manufacturers, the primary advantage of products containing micro-organisms is that the surface can remain clean longer and can reduce bad odours. The long-term effect of microorganisms can reduce the need for heavy-duty/strong cleaning products, which in the long-term can reduce the use of cleaning chemicals and perfumes.[47]

The function of micro-organisms in cleaning products is to decompose organic material on the surface that is being cleaned. For example, this could be fats and proteins on a floor surface.

Nordic Ecolabelling acknowledge the advances of cleaning products with micro-organisms to be efficient in some areas of cleaning. However Nordic Ecolabelling see risks in using living bacteria organisms when cleaning. Therefore, it is important for Nordic Ecolabelling to include specific requirements for the micro-organism-containing products, assuring that it is well known bacteria cultures that are used and thereby minimizing the risk of spreading pathogens or in other way unwanted bacteria.

Due to knowledge gaps regarding the environmental and health risks of micro-organisms in cleaning products,[48] Nordic Ecolabelling restricts use of micro-organisms where it is harder to ensure an adequate safety level. Nordic Ecolabelling does not accept cleaning products

[44] JRC (2025-03-05). Revision of EU Ecolabel criteria for detergent products, Technical Report v. 2.0 (draft). https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/411/documents
[45] EU (2023). https://single-market-economy.ec.europa.eu/publications/com2023217-proposal-regulation-detergents-and-surfactants_en
[46] EU (2023). https://single-market-economy.ec.europa.eu/publications/com2023217-proposal-regulation-detergents-and-surfactants_en
[47] communication with Innu Science and Novozymes
[48] VKM, Madslien, et al (2019). Current knowledge of the health and environmental risks of microbialbased cleaning products. Scientific opinion of the Panel on Microbial Ecology of the Norwegian Scientific Committee for Food and Environment. VKM report 2019:09
https://vkm.no/english/riskassessments/allpublications/healthandenvironmentalassessmentofmicrobialbasedcleaningproducts.4.1aaadf0516963f003a25dde5.html

containing micro-organisms for outdoor use, due to concern regarding impact of the micro-organisms on soil and the aquatic environment when being discharged directly into nature. Nordic Ecolabelling also prohibits the use of cleaning products with micro-organisms to be used in areas where they can come in direct contact with food to reduce the risk of humans ingesting micro-organisms. Nordic Ecolabelling does not allow micro-organisms in products for foam/spray appliance to reduce the risk of inhalation of substances that can be sensitising. Nordic Ecolabelling also limits the use of micro-organisms to products for the professional market. Professional users have more experience of cleaning products and different equipment than consumers. (*However, see above for the question whether Nordic Ecolabelling should open the possibility consumer products to be labelled.*)

The risk assessment is another tool to help identify potential risks and safety measures for specific types of products and usage.

Information on data sheet/label

It must be clearly stated on the product's label and/or data sheet that the product contains micro-organisms so that the user can decide on where and how to use the product. It must be clear that the products are not to be used in places where immunocompromised people are present or on surfaces in contact with food.

It should also be made clear on the labels that the products are not meant for foam/spray application, i.e. the products should be recommended for other types of usage than foam/spray application. As mentioned earlier in this document, the main reason is to lower the risks of inhaling aerosols caused by foam/spraying, and in this case it is aerosols containing micro-organisms.

Performance

One of the claimed advantages of products containing micro-organisms is that they can offer a prolonged cleaning effect. To ensure that Nordic Swan Ecolabelled products offer good cleaning performance, products containing micro-organisms must comply with requirement O15 or O16 (as all other cleaning products) and in addition demonstrate that the product has a prolonged cleaning effect by breaking down protein, starch, and fat/vegetable oil continuously under approximately a one week period (or the period claimed by the manufacturer) through these laboratory tests:

Protein - degradation of proteins shown as degradation on standard casein agar medium or through other scientifically acknowledged medium displaying protein degradation.

Starch - degradation of starch shown as degradation on standard starch agar or through other scientifically acknowledged medium displaying starch degradation.

Fat and/or vegetable oil: degradation shown as degradation on “Spirit Blue”-agar medium or through other scientifically acknowledged medium.

Shelf life

By performing a stability test the producer will show that the reduction of micro-organisms over time is low, to ensure that the products perform well after storage when reaching the final users.

National legislation in Norway concerning micro-organisms

Products to be sold or marketed in Norway containing micro-organisms must fulfil the Norwegian legislation concerning micro-organisms “FOR 2004-06-01 nr 931” when relevant. The Norwegian Environmental Agency is the authority supervising this legislation.