Nordic Ecolabelling for

Hand dishwashing detergents

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Nordic Ecolabelling

Contents

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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 hand dishwasher detergent

Nordic Swan Ecolabel hand dishwashing detergent has reduced environmental impact throughout its life cycle. It meets strict requirements for chemicals which make it a better choice for the environment as well as health. In addition, there are requirements for design of the packaging to promote circular economy.

Nordic Swan Ecolabel hand dishwashing detergents:

- Meet strict environmental requirements for chemicals to prevent long-term, negative effects on nature (biodegradability) and to avoid substances that are toxic to aquatic life, such as fish and crustaceans (ecotoxicity)
- Meet strict health requirements for chemicals, including a ban on 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
- Have packaging that contributes to a circular economy, for example through design and material composition that promote recycling
- Clean effectively

The overall environmental impact in the lifecycle of this product group and Nordic Swan Ecolabel identification of where ecolabelling can have the greatest effect is described in “Environmental impact of hand dishwasher detergents”.

2 What can carry the Nordic Swan Ecolabel?

Liquid hand dishwashing detergents for consumer use or for professional use are eligible for the Nordic Swan Ecolabel, i.e. products that are marketed and designed to be used to wash by hand items such as glassware, crockery and kitchen utensils.

Mix-it-yourself hand dishwashing products (such as tablets) that are to be diluted at least 10 times by the user to form the final product, are also covered by the product group.

The primary function of the product must be as a hand dishwashing detergent. Products are considered for the professional market if more than 80% of sales are to professional users.

Ready-to-use products, pre-soaks, or products intended to disinfect or inhibit the growth of microorganisms (e.g. bacteria) are not covered by the product group.

2.1 Justification of the product group definition

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

Background for the product group definition

The criteria for hand dishwashing detergents includes liquid hand dishwashing detergents for both professionals and consumers. Some requirements vary depending on whether the product is intended for professional or consumer use.

Mix-it-yourself hand dishwashing products (such as tablets) that are to be diluted at least 10 times by the user to form the final product is included in the product group definition. This product type is relatively new on the market and saves transportation of water as the consumers dilute the product themselves. Further, the amount of packaging is reduced, as several tabs are usually sold along with a single spray bottle.

Products for professional use are defined here as products that are marketed for use in professional contexts such as institutions, catering kitchens, restaurants and within the public sector. Products sold for break rooms 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 exclusively marketed towards 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 the majority of the products are sold to that market. 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.

Ready-to-use products are not included in the product group definition. Such products currently have a limited market share, so the potential is low. The environmental gain from ready-to-use products is less use of chemicals due to a lower risk of over-dosing and potentially also reduced use of heated water because these products can be used directly without adding additional water. However, ready-to-use products involve excessive transportation and packaging compared to other hand dishwashing products, and this outweighs the potential environmental gain.

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.

Pre-soaks for professional use may be Nordic Swan Ecolabelled under the Nordic Ecolabelling criteria for dishwasher detergents for professional use.

3 How to read this criteria document

Each requirement is marked with the letter O (obligatory requirement) and a number. All requirements must be fulfilled to be awarded a licence.

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

- Upload
- Requirement checked on 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

Liquid hand dishwashing detergents for consumer use and for professional use, including super concentrated products that are to be diluted at least 10 times by the user, are eligible for the Nordic Swan Ecolabel. The primary function of the product must be as a hand dishwashing detergent.

The relevant environmental impacts found in the life cycle of hand dishwashing detergents are the following: Degradability and toxicity to aquatic organisms, exposure of chemicals harmful to health, eutrophication from phosphorous compounds, user information, dosing, efficacy and packaging. The criteria contain requirements in those areas.

The most significant changes to the requirements from the previous generation of the criteria are:

- The new EUH hazard classes for endocrine disruptors, PBT/vPvB, and PMT/vPvM, and also 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
- In products for consumer use, the restricted fragrance substances, which are subject to declaration now includes the expanded list from the cosmetics regulation
- Protease/subtilisin and surfactants are no longer exempted from the long-term environmental effects requirement, and M-factor is included in the calculation, but to accommodate for this the limit value has been increased significantly
- CDV and biodegradability calculations must be based on the DID-list version 2023 or later
- 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

Changes to the requirements for hand dishwashing detergents generation 7 compared with the previous criteria generation 6.

Figure 1 Overview of changes to criteria for hand dishwashing detergents generation 7 compared with previous generation 6.

Requirement generation 7	Requirement generation 6	Same	Change	New	Comments
O1 Description of the product	O1 Description of the product	X			
O2 Classification of the product	O2 Classification of the product		X		New EUH hazard classes are added.
O3 Supply chain policy and code of conduct	O3 Sustainable raw materials		X		Changed to be up-to-date with new EU legislation. A supply chain policy and supplier code of conduct is now required
O4 Certified raw materials from oil palms	O4 Certified raw materials from oil palms		X		Minor adjustments to the required documentation
O5 Classification of ingoing substances	O5 Classification of ingoing substances		X		New EUH hazard classes, STOT RE 1 and ozone hazard classes are added
O6 Microplastics				X	Updated with REACH definition (microplastics was previously a part of O6 Prohibited substances)
O7 Excluded substances	O6 Prohibited substances		X		The definitions for nanoparticles and endocrine disruptors are updated, and the following new substances are added: Amphoacetates, benzalkonium chloride, bisphenols, linear alkylbenzene sulphonates (LAS) and nitrilo triacetic acid (NTA)
O8 Fragrance allergens	O7 Fragrances		X		Expanded list of fragrance allergens from Cosmetics Regulation
O9 Preservatives	O8 Preservatives	X			
O10 Maximum dosing	O9 Maximum dosing	X			It is clarified in the background text how dosing is calculated for mix-it-yourself products
O11 Long-term environmental effects	O10 Long-term environmental effects		X		M-factor is included in the calculations. Protease/subtilisin and surfactants are no longer exempted. To accomodate for this the limit value has been increased significantly
O12 Critical dilution volume (CDV)	O11 Critical dilution volume (CDV)		X		Limit unchanged, but DID 2023 is required

O13 Surfactants – aerobically and anaerobically biodegradable	O12 Surfactants – aerobically and anaerobically biodegradable		X		Limit unchanged, but DID 2023 is required
O14 Performance test	O13 Performance test	X			Requirement restructured for the purpose of making it easier to understand. All information about test, dosage, references and test conditions are moved to the appendix for all information to be in the same place.
O15 Rigid plastic packaging: Design for recycling	O14A Recycling design of packaging (except pouches)	X			Requirement restructured for the purpose of making it easier to understand. Requirement divided by: PE & PP container, PET container, closures and compatibility between closure and container.
O16 Labels for rigid plastic packaging: Design for recycling of packaging	O14B Labels for rigid plastic packaging: Design for recycling of packaging		X		For 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.
O17 Flexible plastic pouches: Design for recycling	O15 Recycling design of pouches	X			
O18 Weight-Utility Ratio (WUR)	O16 Weight-Utility Ratio (WUR)	X			
O19 Customer complaints	O19 Quality of hand dishwashing detergent	X			
O20 Traceability	O22 Traceability	X			

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, unless stated otherwise in the requirement. Ingoing substances and impurities are defined as in the definitions section, unless stated otherwise in the requirements.

Definitions

For the purposes of the criteria for hand dishwashing detergents, the following definitions apply.

Terms	Definition
Hand dishwashing detergent for consumer use	Products that are marketed towards retailers and/or consumers.
Hand dishwashing detergent for professional use	Products that are marketed for use in professional contexts such as institutions, catering kitchens, restaurants and within the public sector. Products are considered for the professional market if more than 80% of sales are to professional users.
Ingoing substances	All substances* in the hand dishwashing detergent including additives (e.g. preservatives and stabilisers) 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 shall be regarded.*
Impurities	Trace levels of pollutants, contaminants and residues from production, incl. production of raw materials that remain in the cosmetic 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 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, spray bottles and similar.

Closure	Caps/lids, dosage equipment, pumps and 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 refill packaging.
Concentrated product, refill packaging	Packaging in which the concentrated product is diluted with water and thus refilled multiple times.

5.1 General requirements

O1 Description of the products

The applicant must give detailed information on the hand dishwashing detergent to which the application relates. The following information is required:

- Description of the product.
- The product must carry information on the recommended dosing on the primary packaging.

  The recommended dosing for a normal degree of soiling must be clearly and simply stated on the label/packaging.

  For consumer products, the dosing must be stated as X number of millilitres to Y litres of water or as Z teaspoons* 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.

  For hand dishwashing tablets intended to use as sprays, dosage must be given both for washing a single item (e.g. dish, pan etc.) as well for preparing a full kitchen-sink of hand dishwashing solution.
- A complete recipe for the product. Foil that is not removed before use, and that is water soluble is considered part of the recipe. The recipe must, if possible, include for each ingoing substance:

  Trade name

  Chemical name

  Amount (both with and without solvents, e.g. water)

  CAS No. and/or EC number

  DID no. for substances that can be placed in the DID-list 2023 or later versions**

  Function

**1 teaspoon equals 5 ml*

***DID-list: "Detergents Ingredients Database" list, see Appendix 3 for further details*

- Description of the product, e.g. label or product data sheet that includes dosing instructions. The information on labels and/or product data sheets must be in the languages in which the product is marketed.
- A complete recipe with information as set out in the requirement. Nordic 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 Description of the product

A description of the product (e.g. label) and its areas of use is required, in order to assess whether the product falls within the product group definition.

Dosing of the hand dishwashing detergent 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. Products must have a label and/or product data sheet explaining how to dilute the product, see also requirement O10 Maximum dosing.

Nordic Ecolabelling need to know the complete recipe, with all ingoing substances and impurities. This is necessary in order to check the individual requirements below and make the calculations necessary in respect of each requirement. The safety data sheets must be updated in line with prevailing legislation in the country of application, e.g., Annex II to REACH (Regulation 1907/2006/E2EC).

O2 Classification of the product

The hand dishwashing detergent must not be classified as shown in table below.

Table 1 Excluded classifications of the hand dishwashing detergent

Classification	Hazard class and category	Hazard code
Hazardous to the aquatic environment	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2 Aquatic Chronic 3 Aquatic Chronic 4	H400 H410 H411 H412 H413
Hazardous to the ozone layer	Ozone	H420
Acute toxicity	Acute Tox. 1 or 2 Acute Tox. 1 or 2 Acute Tox. 1 or 2 Acute Tox. 3 Acute Tox. 3 Acute Tox. 3 Acute Tox. 4 Acute Tox. 4 Acute Tox. 4	H300 H310 H330 H301 H311 H331 H302 H312 H332
Specific target organ toxicity: single or repeated exposure	STOT SE 1 STOT SE 2 STOT RE 1 STOT RE 2	H370 H371 H372 H373
Skin corrosion/irritation	Skin Corr. 1A, 1B or 1C	H314
Aspiration hazard	Asp. Tox. 1	H304

Respiratory or skin sensitisation	Resp. Sens. 1, 1A or 1B Skin Sens. 1, 1A or 1B	H334 H317 EUH208 "Contains (name of sensitising substance). May cause an allergic reaction."
Carcinogenicity*	Carc. 1A or 1B Card. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362
Endocrine disruption for human health	ED HH 1 ED HH 2	EUH380 EUH381
Endocrine disruption for the environment	ED ENV 1 ED ENV 2	EUH430 EUH431
Persistent, bioaccumulative and toxic properties Very persistent, very bioaccumulative properties	PBT vPvB	EUH440 EUH441
Persistent, Mobile and Toxic properties Very Persistent, Very Mobile properties	PMT vPvM	EUH450 EUH451

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

- Safety data sheet in accordance with Annex II of REACH (Regulation 1907/2006) for the hand dishwashing detergent.

Background to requirement O2 Classification of the hand dishwashing detergent

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 classifications that are not necessarily found in products on the market today.

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 products classified as very toxic, toxic, harmful to health, sensitizing, causes damage to organs, carcinogenic, mutagenic, toxic for reproduction, endocrine disruptors, persistent, bioaccumulative or mobile and toxic, hazardous to the aquatic environment and hazardous to the ozone layer cannot be used.

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 cosmetic 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 policy and code of conduct

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 like for instance MICA. The policy must describe how the company sees to respect human rights, compliance with local and international laws and regulations (deforestation risks (EUDR[1]), 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.

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.

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

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 hand dishwashing detergent.

- 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 hand dishwashing detergent.
- By request, the manufacturer of the hand dishwashing detergent 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 hand dishwashing detergent 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 cosmetic product(s).

Background to requirement O4 Certified raw materials from oil palms

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).

O5 Classification of ingoing substances

Ingoing substances must not be classified with the hazard codes listed in the table below, in accordance with CLP Regulation (EC)1272/2008.

Table 2 Classification of ingoing substances

Classification	Hazard class and category	Hazard code
Hazardous to the ozone layer	Ozone	H420
Carcinogenicity*	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362
Respiratory or skin sensitisation**	Resp. Sens. 1, 1A or 1B Skin Sens. 1, 1A or 1B	H334 H317
Specific target organ toxicity: single exposure or repeated exposure	STOT RE 1	H372
Endocrine disruption for human health	ED HH 1 ED HH 2	EUH380 EUH381
Endocrine disruption for the environment	ED ENV 1 ED ENV 2	EUH430 EUH431
Persistent, Bioaccumulative and Toxic properties Very Persistent, Very Bioaccumulative properties	PBT vPvB	EUH440 EUH441
Persistent, Mobile and Toxic properties Very Persistent, Very Mobile properties	PMT vPvM	EUH450 EUH451

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

** The following substances are exempt:

- Fragrance can be included in the consumer products according to the fragrance requirement O8 Fragrance allergens.
- Enzymes that are in liquid form or in solid form as granulates (including stabilisers in the enzyme raw material)
- Amidoamines in betaine raw materials, such as cocamidopropyl betaine (CAPB): Max. 1% of the betaine active content in the raw material, e.g. for raw materials with 30% betaine active content max. 1% · 30% = 0.3% amidoamine in the raw material.

☐ Safety data sheet in accordance with Annex II of REACH (Regulation 1907/2006) for the hand dishwashing detergent.

☐ 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 O5 Classification of ingoing substances

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 are not necessarily found in products on the market today.

Excluding carcinogenic, mutagenic, reproduction toxic (CMR), sensitizing substances and endocrine disruptors is an important parameter from a health perspective.

STOT RE 1 (specific target organ toxicity: repeated exposure) and substances that are hazardous to the ozone layer are among the group of the most harmful substances identified by the Essential Use concept.

The new CLP classifications for endocrine disruptors, PBT/vPvB and PMT/vPvM (environmental toxicity, persistency, mobility and bioaccumulation) are excluded. Exclusion 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 harmonised 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. If applied to an ingoing substance it is excluded in these criteria.

The substances that are most often classified as sensitising are fragrance substances, preservatives and enzymes. The requirement thereby excludes MI and several other sensitizing isothiazolinone. An exemption is made for sensitising fragrances in consumer products, and they are restricted under requirement O8 Fragrance allergens.

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. This cuts the risk of dust-forming enzymes in the manufacture of hand dishwashing products. The exemption also applies to stabilisers and preservatives in the enzyme raw material. This is because enzymes are proteins and therefore readily biodegradable, and preservatives and stabilisers are needed to keep enzymes stable until they are used.

Amidoamines up to 1% of the active betaine active content is allowed in betaine raw materials, as it is technically unavoidable and without risk in this concentration according to the Asthma and Allergy Nordic.

O6 Microplastics

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

Nordic Ecolabelling reserves the right to change the requirement when more guidance from the EU on the restriction of synthetic polymer microparticles in REACH is published.

** 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:

- *(i) all dimensions of the particles are equal to or less than 5 mm.*
- *(ii) 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:

a) 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.

b) polymers that are biodegradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].

c) polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].

d) 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 O6 Microplastics

Microplastics[2] are very small fragments of plastic material, less than 5 mm. 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.

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

Nordic Ecolabelling is concerned about consequences when microplastics are released into the environment. Thus, we do not apply the derogations in paragraph 4 and 5 of Annex XVII to the REACH Regulation (EC) No 1907/2006 when excluding microplastics.

O7 Excluded substances

The following substances are excluded from use in the product:

- Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), alkylphenol ethoxylates (APEOs), and other alkylphenol derivates (APD)
- Amphoacetate derivatives of N-hydroxyethyl imidazolines (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) Benzalkonium chloride (CAS No. 8001-54-5)
- Bisphenols and bisphenol derivatives, defined as the 34 bisphenols that have been identified by ECHA[3] for further EU regulatory risk management because they are known or potential endocrine disruptors for the environment or for human health, or can be identified as toxic for reproduction
- Butylated hydroxytoluene (BHT, CAS No. 128-37-0)
- There is an exemption for BHT in fragrances in quantities of ≤100 ppm, on condition that the concentration is ≤ 1 ppm in the hand dishwasher detergent.
- Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts
- Linear alkylbenzene sulphonates (LAS)
- Methyldibromo glutaronitrile (MG, CAS No. 35691-65-7)
- Nanomaterials/-particles*
- Nitrilo triacetic acid (NTA), CAS-no. 139-13-9), and its salts
- Nitro musks and polycyclic musk compounds
- Organic chlorine compounds, hypochlorites and hypochlorous acid
- Per- and polyfluoroalkyl substances (PFAS)**
- Phosphate, phosphonate, phosphonic acid and phosphoric acid
- Potential or identified endocrine disruptors, according to any of the following EU member state initiative "Endocrine Disruptor Lists" List I; II and III
- N.B. A substance which is transferred to one of the corresponding sublists called “Substances no longer on list” and no longer appears on any of List I-III, is no longer excluded. The exemption is those substances on sublist II which were evaluated and where concern for endocrine disruption may still remain. Nordic Ecolabelling will

[3] 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).

evaluate the circumstances case-by-case, based on the background information indicated on the sublist.

- PBT and vPvB substances in accordance with REACH Annex XIII, including substances under investigation according to the ECHA PBT assessment list https://echa.europa.eu/da/pbt
- Substances on the REACH Candidate list of SVHC substances https://www.echa.europa.eu/candidate-list-table
- 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).

**Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01): 'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:*

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

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

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

***PFASs are defined as fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group (–CF_3) or a perfluorinated methylene group (–CF_2–) is a PFAS, as described in the OECD recommendations.*

****According to test method 301 (A-F) or 310 in OECD guidelines for testing of chemicals or other equivalent methods evaluated by an independent body and controlled by Nordic Ecolabelling.*

☐ 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 Excluded substances

There are several problematic substances and substance groups that are difficult to exclude through general requirements concerning the product's chemistry. Nordic Ecolabelling has compiled a list of the substances that must not be present as ingoing substances in the ecolabelled product/chemical product. The aim of the list is to prohibit substances that are not excluded through other requirements but are associated with environmental and health hazards. Some substances are included in the list for the sake of clarity, even though they are prohibited under other requirements.

The list includes substances that are standard to include in all product groups if we do not get information that they are irrelevant, as we apply the precautionary principle. In that way

we include unknown or new problematic ingoing substances or impurities that might be present in this product group.

Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), 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.

Amphoacetate derivatives of N-hydroxyethyl imidazolines (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[4].

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

Benzalkonium chlorides are 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 benzalkonium chlorides 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.

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[5].

Butylated hydroxytoluene (BHT, CAS No. 128-37-0)

BHT (butylated hydroxytoluene, CAS 128-37-0) is an antioxidantm, that is excluded due to its potential endocrine disrupting properties. However, an exemption for BHT in fragrances in quantities of ≤100 ppm, on condition that the concentration is ≤ 1 ppm in the hand dishwasher detergent is introduced. This is because substitution is problematic.

However, sometimes a restricted amount can be accepted if substitution is problematic.

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) and diethylenetriamine pentaacetate (DTPA) and their salts are not readily degradable. Furthermore, DTPA is classified toxic for reproduction

[4] Assessment of regulatory needs: Amphoacetate and amphopropionate derivatives of N-hydroxyethyl imidazolines, ECHA, 11 May 2022: Section 3: Amphoacetates for which further EU RRM is proposed https://echa.europa.eu/documents/10162/bfd90551-19c6-41ab-b608-a00147d7db8a

[5] 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

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).

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 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.

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 for use in stay-on and rinse-off products.

Nanomaterials/-particles

Nanomaterials[6] 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[7],[8],[9]. Nordic Ecolabelling takes these concerns seriously and applies the precautionary principle to exclude potentially hazardous nanomaterials from products.

Nitrilo triacetic acid (NTA), 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.

Nitro musks and polycyclic musk compounds

[6] Nordic Swan Ecolabel webtext: https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-and-microplastics/nanomaterials/
[7] 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
[8] 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
[9] 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

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.

Organic chlorine compounds, hypochlorites 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.

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. PFOA, APFO (ammonium pentadecafluorooctanoate) and certain fluoro acids are included in the Candidate List due to being reprotoxic, as well as having PBT properties.

Phosphate, phosphonate, phosphonic acid and phosphoric acid

Phosphorus and nitrogen are the primary nutrients driving eutrophication. This process depletes oxygen in lakes, oceans, and watercourses, leading to the formation of dead zones. In addition, phosphorus is a non-renewable resource facing continuously rising demand, and it can only be sourced from phosphorite, which is found in only a few countries—many of which have unstable regimes. Aside from Morocco, several of these countries are already nearing depletion of extractable phosphorus[10]. Phosphate and Phosphonates are a group of phosphorous compounds that are good complexing agents. They are prohibited by this requirement, together with two other phosphorous containing compounds phosphonic acid and phosphoric acid.

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

[10] Når det er tomt her - er verden ille ute | DN (Accessed on 25 October 2024).

increases in public health diseases. While effects in wildlife populations have been confirmed, evidence is pointing to effects also in humans.

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.

Substances on the REACH Candidate List and 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.

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 microorganisms. QACs are toxic to a lot of aquatic organisms including fish, daphnids, algae, rotifer and microorganisms employed in wastewater treatment systems.

O8 Fragrance allergens

All fragrance substances, including fragrance substance in plant extracts in the hand dishwashing detergent must live up to the following requirements:

- Fragrances must not be present in professional products, see definitions section.
- Fragrances in consumer products must be added in line with IFRA's guidelines. The IFRA's (International Fragrance Association) 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) in consumer products.
- The following fragrance allergens are prohibited: Oak moss extract (Evernia prunastri, CAS No. 90028-68-5) and tree moss extract (Evernia furfuracea, CAS 90028-67-4).

 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 O8 Fragrance allergens

Fragrances are not permitted in professional products. Professional dishwashing personnel use hand dishwashing products in their working environment but are unable to control which products are purchased. A worker/dishwasher is usually not able to choose whether the product should be fragrance-free and is likely to be exposed to fragrances involuntarily. The same applies to public procurement, where central purchasers buy in products for municipalities, county councils and institutions, and the dishwashing personnel are not involved in the product choice. Professional dishwashing personnel are more exposed to dishwashing products than consumers are, since they work in a dishwashing room all day.

Since both retailers and manufacturers state that fragrances are relevant for a large number of customers, fragrances are permitted in hand dishwashing detergents for the consumer market. Also, consumers can choose between fragranced and fragrance-free products, as content of fragrance must always be declared on the packaging. The aim of the requirements is to provide as much protection against new allergies in the society as possible.

IFRA stands for the “International Fragrance Association” and 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[11] 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 included 56 new fragrance substances that must be declared on the packaging of cosmetic products, leading to a total of 80 substances that are subjected to declaration[12]. These substances are adopted from the EU Scientific Committee on Consumer Safety (SCCS) opinion on fragrance allergens in cosmetic products from June 2012[13]. SCCS refrains from recommending maximum limits for the content of the fragrance 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 hand dishwasher detergents.

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), therefor the requirement includes all these substances.

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

SCCS also recommends that chloroatranol and atranol are not included in cosmetic products. Nordic Ecolabelling therefore consider it relevant to also prohibit their presence in hand dishwasher detergents. 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).

O9 Preservatives

Preservatives included in the product or constituent substances must not be bioaccumulative. Preservatives are judged not to be bioaccumulative if BCF < 500 or logKow < 4. If both values are available, the value for the highest measured BCF is to be used, see appendix 3.

- Documentation of BCF or logKow, Appendix 1 and 2 or safety data sheet for the preservative.

Background to requirement O9 Preservatives

Note that MI (methyl isothiazolinone, CAS No. 2682-20-4) and other sensitizing preservatives are prohibited according to requirement O5 Classification of ingoing substances and O7 Excluded substances.

Preservatives are added to liquid products to prevent bacterial growth in the products. Hand dishwashing detergents 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 hand dishwashing detergents. 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.

Nordic Ecolabelling's requirements concerning preservatives are strict. Preservatives used in hand dishwashing detergents must according to Biocidal Products Regulation ((EU) 528/2012) be approved to PT6 (product type 6: Preservatives for products during storage) in line with the Biocidal Products Regulation. Sevaral of these preservatives are sensitising or formaldehyde donors. The different preservatives are not necessarily interchangeable. They have different levels of effect on different types of microorganisms (gram positive and gram-negative bacteria and fungi). Some organic acids, such as lactic acid and sorbic acid, also have relatively little effect when the pH sits around the neutral area, while peroxides and DBNPA are not used very widely as they break down relatively quickly.

There are several other requirements, in addition to the requirement on preservatives, which also restrict the range of preservatives. Requirement O5 Classification of ingoing substances excludes formaldehyde and formaldehyde-releasing products, the latter of which have been widespread. Requirement O7 Excluded substances has organic chlorine compounds on the list, which excludes CMIT (CAS No. 26172-55-4) that is also a common preservative. Endocrine disruptors exclude 2-Phenylphenol among others.

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 considered to be bioaccumulative if logKow ≥ 4.0. If the substance has a biological concentration factor (BCF) ≥ 500 the substance is considered to be bioaccumulative, and if the BCF < 500 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.

5.2 Dosing, ecotoxicity and biodegradability

O10 Maximum dosing

The dosing is calculated as the recommended dose in grams per litre of water.

The recommended dose must not exceed **1.0 grams per litre of water.**

For density calculations, density at room temperature shall be used. If the dose is specified as an interval, the highest figure in the interval must be used in the dosing calculation for this requirement, and in the requirement O18 Weight-Utility Ratio (WUR).

For mix-it-yourself hand dishwashing products (such as tablets): The dosage is calculated for in-use solution prepared according to the manufacturer's instructions, when the detergent is used for a full kitchen-sink.

- Calculation of dose per litre of water and a product label or draft label with the specified dose.

Background to requirement O10 Maximum dosing

The conclusion of a survey conducted in 2012 was that people use their hand dishwashing detergent without fully following the instructions on the recommended dose. In short, over-dosing occurs and dosing without measuring occurs. Many people now have dishwashers and they only hand wash a small proportion of their dishes, and so they may not always fill up the whole sink with water, which tends to result in dishwashing with a higher concentration than is stated on the product.

There is often a correlation between viscosity and active content, i.e. products with high active content usually have a higher viscosity. A product with higher viscosity might conceivably be dispensed in smaller quantities, since when squeezing it out of the bottle it is thicker/less fluid, compared with one that contains a lot of water. Nordic Ecolabelling thus believes that consumers/users are, to a certain extent, most likely to dispense small quantities of a concentrated/viscous product than of a non-concentrated/less viscous product. However, this correlation between consumer dosing and concentration is not linear. At a certain point, the concentration of the product does not lead to the same low dosing, with a higher concentration simply leading to greater over-dosing.

As far as we can tell, consumers do not dose entirely in line with the manufacturer's recommendations, and we also do not have grounds to claim that products with lower recommended dosing levels are dosed in smaller amounts than those with higher recommended dosing levels.

Since the situation concerning the use of hand dishwashing detergents, dosing instructions and viscosity is complex, we developed a requirement which Nordic Ecolabelling believes

takes account of both over-dosing and the desire to avoid too much transport of water (in the form of products with relatively high water content).

In order to promote the high-viscosity products to some extent, the limit has been set such that products with a dose less than or equal to 0.6 g/l working solution (the average value for the ecolabelled hand dishwashing detergents scrutinised in the revision for generation 5) are to use a figure of 0.60 g/l when calculating CDV, while those that have a higher dose (i.e. 0.61 g/l – 1.0 g/l) are to use the stated dose.

It is not entirely accurate for all varieties of use, but it is judged to be the most accurate in the context, considering the products overall. Nordic Ecolabelling does not wish to promote the most concentrated products, since patterns of use suggest that consumers do not use the products as instructed, but at the same time Nordic Ecolabelling does not wish to encourage the highly diluted products.

For mix-it-yourself products, the dosage is calculated for in-use solution prepared according to the manufacturer's instructions on the label of how many sprays is required when the detergent is used for a full kitchen sink. This should be calculated by measuring the volume of the required amount of sprays and multiplying that volume with the density of the in-use solution.

O11 Long-term environmental effects

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

C_{total}: ≤ 0.17 grams/litre in-use solution.

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 at a dose of 0.60 grams / litre in-use solution, if the indicated dose on the label is less than or equal to 0.6 g / l. For products with dosage above 0.60 g / litre in-use solution, the highest indicated dosage is used.*

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

- 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.
- Appendices 1 and 2 signed and completed, or alternatively equivalent signed information.

Background to requirement O11 Long-term environmental effects

A Nordic Swan Ecolabelled hand dishwashing detergent 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 hand dishwashing detergents 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 hand dishwashing detergents are important, because hand dishwashing detergents 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 below is connected to CLP 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 hand dishwashing detergents. Surfactants are no longer exempted in this criteria version, and the multiplying factor M for H410 classifications is included in the calculation. To accommodate for this a significantly higher limit value is introduced.

O12 Critical dilution volume (CDV)

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

A product's critical dilution volume is calculated at a dose of 0.60 g/l of in-use solution, if the stated dose is less than or equal to 0.60 g/l. If the recommended dose exceeds 0.60 g/l, the recommended dose itself is used in the calculations. The recommended dose, however, cannot exceed 1.0 g/l, as stated in requirement O10 Maximum dosage.

The product's critical dilution volume (CDV) must not exceed the following limit value for **$CDV_{chronic}$: ≤ 1500 litres**

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

$$CDV_{chronic} = \sum CDV(i) = \sum \left(dosage(i) \cdot 1000 \cdot \frac{DF_i}{TF_{chronic}(i)} \right)$$

where

$dosage(i)$ is the weight (g) of the substance (i) in use solution

$DF(i)$ is the degradation factor for the substance (i)*

$TF_{chronic}(i)$ is the chronic toxicity factor for the substance (i)*

** 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.*

- 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 O12 Critical dilution volume (CDV)

The critical dilution volume (CDV) is a theoretical value which considers the toxicity and aquatic degradability of each substance. A maximum limit for CDV ensures that the Nordic Swan Ecolabelled products have a very small impact on the recipient watercourse. The limit value is based on data from existing Nordic Swan Ecolabel licences.

CDV is calculated for all ingoing substances included in the hand dishwashing detergent. 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.

O13 Surfactants – aerobically and anaerobically biodegradable

All surfactants in the hand dishwashing detergent, irrespective of their function in the product must be readily aerobic 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 and can be obtained from Nordic Ecolabelling's websites.

Background to requirement O13 Surfactants – aerobically and anaerobically biodegradable

Surfactants are widely used in hand dishwashing detergents and constitute a large proportion of the chemicals in such products. As hand washers 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 considered to be 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 detergent regulation prescribes that surfactants must be aerobically biodegradable, but there are opportunities for exemptions from the detergent regulation for products for professional use. Since the possibility exists, we believe it is appropriate to retain the requirement of aerobic biodegradability of surfactants It is therefore very important to require surfactants (irrespective of function) to be biodegradable in both aerobic and anaerobic conditions for this product group.

5.3 Performance

Under this requirement, a product must be at least as good as or better than the product with which it is being compared (the reference product).

O14 Performance test

Performance is measured as the product's cleaning ability (ability to remove soiling/make dishes clean), and its cleaning capacity (how long the product lasts), and it is compared with a reference product.

The product must be as good as or better than the reference. This entails that one of the following two alternatives is fulfilled:

1. At least 80% of the testing rounds (e.g. 4 out of 5) must yield a positive result for the test product (as good as or better than the reference product) in order for the test product to be considered in compliance with the performance requirement
2. By the use of statistical methods, using a one-sided 95% confidence interval, it is shown that the test product is as good as or better than the reference product in at least 80% of the testing rounds.

The performance test must be performed by a laboratory that meets the requirements concerning test laboratories in Appendix 3.

The performance test must be performed in accordance with the test framework described in Appendix 5, where information about choice of reference detergent, product dosage, washing conditions and report setup are also stated.

- Documentation on the test laboratory, in accordance with Appendix 3.
- Test report showing that the product is as good as or better than the reference product, in accordance with Appendix 5.

Background to requirement O14 Performance test

Effectiveness is a key parameter in showing that the product offers the cleaning performance that consumers demand. The performance must be satisfactory at the recommended dose. Dishwashing performance must be demonstrated at the lowest dose stated on the packaging. The reason for not using the fixed dose of 0.6 g/l (as in the requirements concerning CDV and environmentally hazardous substances) is that the stated dose on the bottle is the information that end consumers receive, and thus they will expect the product to perform at that dose.

The test must be carried out in a laboratory. The manufacturer's laboratory may be used for the performance test, see test laboratory requirements in Appendix 3.

Nordic Ecolabelling's framework test is a method that includes the most relevant parameters from the IKW test, while continuing to allow scope to optimise the test. The IKW test is considered to have the advantage of being a more standardised test, but it has its shortcomings with regard to Nordic conditions:

In the Nordic region, we generally have soft water, while the IKW test requires hard water. Nordic Ecolabelling wants the tests to continue being performed at the relevant water hardness for the Nordic region, with no desire to standardise the test at high water hardness. The testing instructions for the IKW test specify which fats and so on must be used for

soiling. The two recipes for soil stated in the test comprise 12 components, which are considered slightly excessive by several of the parties with which Nordic Ecolabelling has been in contact. Nordic Ecolabelling's framework test now specifies that the manufacturer must report the soil composition used in the test and that the soil mix must also contain carbohydrates and protein (such as flour and egg). The test also states that the soil must mainly comprise both animal and vegetable fats. Nordic Ecolabelling has additionally been informed that it can be difficult in the IKW test to demonstrate that an increased dose of the product gives an increased effect. Nordic Ecolabelling's test with only water is therefore included as a parameter for judging the test itself, i.e. demonstrating that the test can show a difference between dishwashing with and without detergent.

Professional products must be compared with another professional product, because products for the professional market face different demands, not least concerning the ability to remove tough burned-on residues and clean very greasy dishes, compared with consumer products. Nordic Ecolabelling therefore considers it relevant for the product to be compared with equivalent products on the market.

The requirements concerning the laboratory are set out in Appendix 3 of the criteria. Nordic Ecolabelling wishes to give applicants greater flexibility by accepting tests from other competent and independent testing institutes. Nordic Ecolabelling wishes to make it even more acceptable for the manufacturers to use their own laboratories for performance testing.

The applicant's own laboratory, and external testing institutes that do not meet EN ISO 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, and the performance test must 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 hand dishwashing detergents, and that the results achieved are reproducible.
- It must be possible for Nordic Ecolabelling to come and observe the performance of a test.

5.4 Packaging

The packaging requirements target the primary packaging and its' recyclability. These requirements apply to the primary packaging such as bottles, containers, pouches etc. For definitions of primary packaging components, see definitions section.

The packaging requirements are: O15 Rigid plastic packaging: Design for recycling and O16 Labels for rigid plastic packaging: Design for recycling of packaging regard rigid plastic packaging, and O17 Flexible plastic pouches: Design for recycling regards flexible plastic pouches. There are no specific requirements for biobased packaging like paper or cardboard packaging, as the relevance of this is low due to the limited use in this product group. O18 Weight-Utility-Ratio (WUR) applies to all products and aims to minimize the amount of packaging per functional dose of hand dishwash detergent.

Mix-it-yourself hand dishwashing products (such as tablets) must be diluted at least 10 times by the user to the finished product with a certain amount of water. If they are sold with a refill bottle, both the tablet packaging and the refill bottle must meet the packaging requirements. If spray bottles are used, they must have a permanent aerosol reducing foaming nozzle.

O15 Rigid plastic packaging: Design for recycling

Rigid plastic packaging must be made from polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET). The packaging should have a design that enables material recovery. This means that:

PE and PP containers

- The container must be made from > 99% polyethylene (PE) or > 95% polypropylene (PP). The remaining material must not be biodegradable or of any other material than PE or PP.
- Fillers (such as $CaCO_3$) cannot be included in PE or PP containers at a level that the density of the plastic exceeds 0.995g/cm^3.
- The container should be white or uncoloured and must not contain carbon black pigments.
    - Exemption: Containers containing recycled plastic (Post Consumer Recycled) may be coloured/tinted. The colouration may not include carbon black. However, recycled plastic may contain small amounts of carbon black used in other colours than black. It must then be documented that the NIR sensor reads and sorts the container/bottle to the correct plastic fraction.

PET containers

- The container must be made from > 98% polyethylene terephthalate (PET).
- The container should be white or uncoloured and must not contain carbon black pigments.
    - Exemption: Containers containing recycled plastic (Post Consumer Recycled) may be coloured/tinted. The colouration may not include carbon black. However, recycled plastic may contain small amounts of carbon black used in other colours than black. It must then be documented that the NIR sensor reads and sorts the container/bottle to the correct plastic fraction.

Closures

- The closure must be made from > 99% polyethylene (PE) or > 95% polypropylene (PP), or > 98% polyethylene terephthalate (PET).
    - Exemption: Spray devices which may contain the 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: Small metal parts in pumps
- PS (polystyrene) and PVC (polyvinylchloride) or plastics based on other types of halogenated plastics must not be present in the closure.
- Fillers (such as $CaCO_3$) cannot be included in closures of PE or PP at a level that the density of the plastic exceeds 0.995g/cm^3.
- Closures must not contain carbon black pigments.
    - Exemption: 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 to the correct plastic fraction.
- Silicone is not allowed in closures.
    - Exemption: Closures on PET squeeze bottles: Closures may include a membrane composed of floating silicon with a density of less than 0.95 g/cm³ (containing less than 1000 ppm of D4, D5, and D6). The packaging must attain a minimum recyclability score of B, as verified by a recyclability rate certificate by RecyClass.
- For mix-it-yourself hand dishwashing products that are diluted in spray bottles: all spray products must have a permanent aerosol reducing foaming nozzle.

Compatibility between closure and container

Container and closures must be compatible with each other, in accordance with the following:

For PE containers:

- PP/OPP-closures are not allowed unless the following text or similar is stated on the packaging: Take the cap off prior to recycling to improve recycling.

For PET containers:

- Closures must have a density of < 1 g/cm^3.

- Packaging specifications or certificate for containers, showing the materials used, density of PE or PP components and the colour of the container. Appendix 4 or equivalent filled out by the manufacturer/supplier can be used.
- Packaging specifications or certificate for closures, showing the materials used, density of PE or PP components and that carbon black pigments are not added. Appendix 4 or equivalent filled out by the manufacturer/supplier can be used.
- Closure on PET squeeze bottle with membrane of silicone:

- Documentation showing that the density of the silicone is less than 0.95 g/cm3 for containers of PET or more than 1.0 g/cm3 for containers of PE or PP, and that the total content of D4, D5 and D6 is less than 1000 ppm. Appendix 1 and 4 can be used.
- Recyclability rate certificate from RecyClass showing that the packaging is fully recyclable with a minimum recyclability score of B.

- For mix-it-yourself hand dishwashing products that are diluted in spray bottles: Documentation from the manufacturer of the spray trigger, stating that it has a permanent foaming nozzle. Appendix 4 or equivalent filled out by the manufacturer/supplier can be used
- For PE containers with PP/OPP closure: Label showing text regarding instruction to remove the cap before recycling.

O16 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.
  - Exemption: Cross-over labels of PP.

For packaging made from polyethylene terephthalate (PET):

- The label must be of PP or 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 non-bleeding and 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 on PET packaging: Calculation of label size compared to the surface of the container. Nordic Ecolabelling's calculation sheet for the packaging can be used.
- For labels on paper/cardboard packaging: Specification from the manufacturer showing that the label is made of paper and that the adhesive is water soluble. 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 requirements O15 Rigid plastic packaging: Design for recycling and O16 Labels for rigid plastic packaging: Design for recycling of packaging

The Nordic Ecolabelling has chosen to set requirements on recycling design to increase the possibilities for recycling of the packaging material and thereby be in line with the EU plastic strategy. Exemptions to the requirements are made where other types of materials than specified cannot be dispensed with in specific types of packaging, or where the recyclability of the packaging is not impaired.

Primary packaging (Bottle/container)

“Plastförpackningar – En återvinningsmanual från FTI” (Plastic Packaging – A recycling manual from FTI) 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. Since these types of plastic are considered to be 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, PS and PVC or plastics based on other types of halogenated plastics are not allowed in the closure.

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.

Packaging that is white or transparent is the best choice when it comes to recycling, since such packaging does not cause problems during scanning/sorting of the bottles and also make the reusage of the plastic more attractive. Therefore, black coloured closures are excluded, and for the packaging the requirements go one step further with only allowing white and clear packaging. In the recycling process the pigments cannot be removed from the recycled materials. Thus, when it comes to packaging made from recycled plastic* they are exempted from this requirement and can be coloured/tinted. The coloration/tint cannot be done with carbon black, since that is the pigment that causes most problems during

recycling. When discussing with stakeholders the Nordic Ecolabel has received information that recycled plastics often are tinted to get a more appreciative colour.

*The recycled plastic here refers to Post Consumer Recycled plastic to harmonize with the WUR requirement.

Label

In development of the requirement on labels, key players within the recycling industry in Sweden (FTI), Finland (Uusiomuovi), Norway (RoAF, Mepex, Norner, Grønt Punkt Norge) and Denmark (Plastindustrien) were consulted in order to ensure relevant requirements with respect to the current Nordic waste streams. Furthermore, major label producers and suppliers, as well all Nordic Swan Ecolabel licensees were consulted, to ensure achievable requirements.

PE and PP containers should have labels of the same plastic material in order to facilitate correct sorting by the NIR sensor and reducing the risk of contamination of the PE and PP streams.

PET containers must have labels with density <1.0 g/cm^3. As a consequence, for the time being, cPET labels are not allowed. Nordic Ecolabelling will consider allowing cPET-labels with the appropriate specifications, if cPET labels become endorsed by EPBP (The European PET Bottle Platform) for PET bottles and/or by RecyClass (www.recyclass.eu). 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 containers (A-PET).

If the NIR sensor at the sorting facility hits the label instead of the bottle, the bottle may end up in the rejected fraction. Therefore, labels and shrink film labels of different materials than the PET container must not cover more than 50% of the container surface for sizes ≤ 500 ml and more than 70% for sizes > 500 ml in accordance with RecyClass' guidelines.

Direct printing on plastic packaging is not permitted, as ink residues lower the quality of the recycled plastic and it is desirable to keep the recyclate stream as clean as possible. However, direct print of date codes, batch codes and UFI (Unique Formula Identifier) are permitted on all types of packaging.

The requirements mean that PVC and other halogenated plastics are excluded since they lead to adverse environmental impacts in waste handling, and paper labels are excluded since they degrade the recycled material.

Furthermore, it means that metallized labels are not permitted as these can be detected by metal detectors, thus 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[14]. However, these metal materials will not be recycled, and single use of metal is not supportable from a resource point of view.

[14] https://www.epbp.org/design-guidelines/products (Accessed on 2023-11-24)

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[15] [16] which is the reason for not allowing metals in the packaging.

Small metal parts in pumps for hand dishwashing bottles are exempted. Recyclers have confirmed that while this metal is not recycled as metal, it does not interfere with plastic recycling. However, pumps help controlled and correct dosing.

Compatibility

Nordic Ecolabelling started a project to evaluate labels and their effect on the recycling process during 2020 which led to a requirement on labels being introduced in 2021. For background, see above.

Large amounts of inorganic filler affect the ability to recycle plastic, because the 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 hand dishwashing detergents contain a requirement that filler must not be added to the HDPE to such a level that its density exceeds 1 g/cm^3 and to PP in such level that the density does not exceed 1 g/cm^3.

O17 Flexible plastic pouches: Design for recycling

Flexible plastic packaging must be made from polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET). The packaging should have a design that enables material recovery. This means that:

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

  Exemption is made for text and pictograms.

  Exemption is also 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 pouch 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 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 out of EVOH (Ethylene vinyl alcohol) in maximum amounts of 5% related to the total weight.

[15] Plaskretsen and FTI, Bättre förutsättningar för återvinning av plastförpackningar.
[16] http://www.plasticsrecycling.org/hdpe sourced on 08.08.2017

The packaging includes pouches or other plastic "bags". Closures include caps/lids, dosage equipment and pumps and spray triggers mounted on the packaging.

- 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 4 or an equivalent declaration may be used.
- A calculation showing that the density measurement is not exceeded.

Background to requirement O17 Flexible plastic pouches: Design for recycling

The requirement is similar to requirement O15 Rigid plastic packaging: Design for recycling. Nordic Ecolabelling has had dialogues with FTi regarding pouches. They suggested only accepting pouches of PE since they are the easiest to recycle, but Nordic Ecolabelling has decided to accept monomaterial pouches of both PE, PP, and PET.

Nordic Ecolabelling has decided to only accept 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.

O18 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 limit values are:

Product type	Limit value
Liquid hand dishwashing detergents	0.1 g packaging/litre in-use solution
Mix-it-yourself hand dishwashing detergents (e.g. tablets)	30 g packaging/litre in-use solution

Mix-it-yourself hand dishwashing detergent (e.g. tablets): In-use solution is here defined as the tab diluted in the bottle following the manufacturer's instruction.

The exemptions from WUR requirement 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:

$$WUR = \sum \frac{(2 \cdot V_i - 2.5 \cdot R_i)}{D_i} \leq limit\ value$$

$V_i =$ 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.

$Ri =$ 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.

$Di =$ 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)).

For concentrated products sold as refills, both the main dispensing packaging and the refill packaging must be included in the WUR calculation. If the packaging format, in which the product is to be diluted, is not specified then the WUR requirements only apply to the main packaging of the concentrated product. For a definition of "main packaging" and "refill packaging", please see the definitions section.

- Declaration/documentation from the packaging manufacturer stating the type of material in the packaging components (e.g. closure (cap, spray nozzle etc.), bottle and labels). Appendix 5 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 5 can be used.
- 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 O18 Weight-Utility Ratio (WUR)

The purpose of the weight-utility ratio (WUR) is to reduce the amount of packaging and promote the use of recycled materials, thus helping to ensure a reduction in the unnecessary transport of packaging and air, and to lower CO_2 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 hand dishwashing detergent 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 hand dishwashing detergents.

Included in the primary packaging is the weight of the packaging in which the hand dishwashing detergent is packaged. This also includes labels, closures and any fitted dosing devices, etc.

The WUR equation consists of three parameters: weight of the primary packaging, weight of recycled material (postconsumer) in the packaging, and the number of functional doses in the packaging. The requirement promotes the usage of recycled materials, as 1.25 times the weight of the recycled materials is subtracted from the weight of the packaging. The aim is to stimulate the choice of packaging that uses recycled raw materials. The factor has been chosen so that if you have 80% recycled material, WUR = 0. Packaging made from more than 80% post-consumer recycled/regrind (PCR) raw materials is thus exempted from the WUR calculation, as in the EU Ecolabel. It appears to be a suitable way to try to encourage a high proportion of recycled packaging material. However, even a small amount (e.g. 5%) of recycled material helps to meet the requirement if you are on the borderline. The availability of packaging made from recycled raw materials is increasing in the Nordic market, and Nordic Ecolabelling believes there is the utmost relevance in trying to stimulate greater recycling.

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.

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 in the packaging. Take back systems are not the same as packaging materials that are part of a recycling system where the packaging is recycled and used as new plastic materials.

5.5 Licence maintenance

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

O19 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 O19 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.

O20 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 O20 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 hand dishwashing detergents

RPS scheme

Life cycle stages	Area and assessment of R, P, S (high, medium or low)	Comments
Raw materials		
	Fossil oil and other non-renewable inputs to produce chemical raw materials R: High P: Low S: Low	High Relevance Large consumption of energy and fossil resources that lead to air and water pollution and drive global warming. Degraded and polluted land from extraction of oil, gas, metals, and minerals Low Potential Low potential for minimizing the use of fossil resources for chemical raw materials due to the lack of renewable raw materials. Reducing overdosing reduces raw material needs. Low Steerability Low steerability for fossil fuel raw materials except to limit allowable usage, which would in turn favor palm oil. Requirement for clear dosage instructions. However, it is difficult to steer consumer behaviour related to overdosing.
	Plant materials (palm oil, etc.) for production of chemical raw materials R: High P: Medium S: High	High Relevance Extensive non-sustainable extraction of renewable raw materials, especially palm oil, leading to deforestation, peatland degradation, biodiversity loss, soil erosion, water pollution, and widescale burning leading to air pollution and greenhouse gas releases Medium Potential Low potential for minimizing the use of palm oil for renewable raw materials due to low availability of alternative renewable raw materials. However, high potential for minimizing the negative impacts of extraction of palm oil and other renewables. Reducing overdosing reduces raw material needs. High Steerability Requirements for RSPO certified palm oil, supply chain policy, and code of conduct. Requirement for clear dosage instructions.
	Fossil-based plastic packaging R: High P: High S: High	High Relevance Large consumption of energy and fossil resources that lead to air and water pollution and drive global warming. High Potential Promote design for recycling. High Steerability Requirements on design for recycling
	Bio-based packaging R: Low P: High S. High	Low Relevance Non-sustainable forestry and agriculture leads to deforestation, biodiversity loss, soil erosion, water pollution, and GHG emissions, however the use of paper based and cardboard packaging for hand dishwashing detergents is very limited.

		High Potential Promote recycled packaging and certified bio-based raw materials along with high fill-rates. Design for recycling. Promote refill solutions. High Steerability Requirements on packaging materials, weight-utility ratio, fill ratio, and design for recycling
	Water and electrical consumption for production of raw materials R: High P: Medium S: Low	High Relevance High consumption of water, energy, and fossil resources. Medium Potential Promote water and energy efficiency to lower consumption from production. Low Steerability Production facilities require water and energy to run, and we lack information about reducing this usage.
Production/distribution		
	Energy consumption for production of products and packaging R: Medium P: Low S: Low	Medium Relevance Low to medium consumption of energy relative to other lifecycle phases. Low Potential Promote water and energy efficiency to lower emissions from production. Low Steerability Production facilities require water and energy to run, and we lack information about reducing this usage.
	Transportation from production to retail and to end users R: Medium P: High S: Low	Medium Relevance Medium consumption of energy relative to other lifecycle phases. Particulate matter and emissions from vehicles. High Potential Limit the use of non-renewable energy, improve logistics, and lower emissions from trucks. Low Steerability Distribution is carried out by external companies transporting both Nordic Swan Ecolabelled and non-Nordic Swan Ecolabelled products.
Use phase		
	Exposure of chemicals harmful to health R: High P: High S: High	High Relevance Exposure to allergens and other hazardous chemicals that can impact consumers' and professional users' health High Potential Limit or exclude ingredients with negative impact on health like allergens, endocrine disruptors, and carcinogens. Limit additional exposure from overdosing of product via efficacy and foam qualities. Reduce exposure via inhalation for spray products. High Steerability Requirements to prohibit or strongly limit problematic substances. Clear dosage instructions. Efficacy requirements. Spray nozzles that reduce the formation of inhalable aerosols. However, it is difficult to steer consumer behaviour related to overdosing.
	Energy consumption for heating water R: High P: High	High Relevance Energy usage for heating water to wash temperature is greater than energy use in all other lifecycle phases of hand dishwashing detergent.

	S: Low	High Potential Minimizing hot water use with more efficient hand dishwashing techniques (avoid running the faucet; fill wash basin with soapy water, not whole sink) and reducing the water temperature conserves energy and water. Low Steerability Could add requirement for washing guidance (e.g., AISE icons) in addition to dosage guidance on packaging. Could add requirements for washing efficacy at lower temperatures, but it is difficult to steer consumer behaviour regarding hot water usage.
End of life		
	Product emissions from use (degradability, eutrophication, and toxicity to aquatic organisms) R: High P: High S: High	High Relevance Emissions to water bodies from dishwashing can harm aquatic organisms and/or lead to eutrophication (nutrient-loading). This can affect biodiversity and threaten ecosystems. High Potential Reduce the content of environmentally hazardous ingredients including substances toxic to aquatic organisms, non-degradable substances, microplastics, endocrine disruptors, and substances that can lead to eutrophication (nutrient-loading). Reduce overdosing. Reduce emissions through efficient products. High Steerability Requirements to prohibit or strongly limit problematic substances. Efficacy requirements. Clear dosage instructions. However, it is difficult to steer consumer behaviour related to overdosing.
	Packaging disposal (incineration, reuse or recycling) R: Medium P: High S: Medium	Medium Relevance Loss of the material value if packaging is incinerated (higher impact) vs. recycled (lower impact) vs. reused (lowest impact) High Potential Limit resource use for packaging and to promote design for recycling. Medium Steerability Requirements on packaging materials and design for recycling. However, there is low steerability over consumer recycling behaviours.
	Water and electrical consumption for wastewater treatment R: Medium P: Low S: Low	Medium Relevance Medium consumption of water and energy relative to other lifecycle phases Low Potential No potential for the licensees to limit the use of energy for wastewater treatment. Low Steerability Sewage treatment plants are run by the public sector and hence difficult to affect by the producer of hand dishwashing products.

MECO scheme

	Raw material	Production and transport	Use	End of life
Material	Extraction of oil, gas, metals, and minerals for non-renewable raw materials Agricultural production for renewable raw materials Forestry for paper-based packaging Water consumption in raw material production		Water consumption in use (increases significantly if rinsing under running water)	Loss of the material value if packaging is incinerated (higher impact) vs. recycled (lower impact)
Energy (GWP = Global warming potential, LCA study of home-care products from Koehler 2009)	Energy consumption to extract/cultivate and process raw materials for product and packaging (15-30% GWP in LCA, with higher water content reducing raw chemical contribution but increasing 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 use of transport vehicles (ca 5% in LCA)	Energy for heating water for product use (50-75% GWP in LCA)	Energy from wastewater treatment and solid waste handling (5-20% GWP in LCA)
Chemicals	Agricultural chemicals including pesticides and fertilizers Exposure to hazardous chemicals in the work environment or nearby communities	Exposure to hazardous chemicals in the work environment or nearby communities Air pollution from transport vehicles	Consumer and professional users' exposure to allergens and other hazardous chemicals	Wastewater emissions of chemicals toxic to aquatic organisms Emissions of phosphorous compounds that cause eutrophication
Other	Biodiversity and ecosystem impact from resource extraction, forestry, and agriculture Conflicts arising due to land right disputes and impacts on local and indigenous communities Higher food prices due to raw material production competing with food production	Particulate matter from transport vehicles	Satisfaction influenced by product quality, effectivity, and shelf life Reduced wastage based on dosing instructions and design	Biodiversity and health impacts from hazardous chemicals from sewage sludge leaching to land and water Emissions of microplastics or nanomaterial if in formulation

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7 Future criteria generation

Input for future criteria generation will be added after the consultation.

8 Criteria version history

Criteria version history will be added after the public 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.

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 hand dishwashing detergent

To be used in conjunction with an application for a licence for the Nordic Swan Ecolabel of cosmetic 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.

Product name:	
Type of product:	
Professional product *Products that are marketed for use in professional contexts such as institutions, catering kitchens, restaurants and within the public sector. Products are considered for the professional market if more than 80% of sales are to professional users.*	☐
Consumer product *Products that are marketed towards retailers. Products are considered for consumer use if more than 80% of sales are to consumers*	☐

Where 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.

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

- **Ingoing substances:** All substances* in the hand dishwashing detergent including additives (e.g. preservatives and stabilisers) 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 shall be regarded.*

- **Impurities:** Trace levels of pollutants, contaminants and residues from production, incl. production of raw materials that remain in the cosmetic 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 ≥ 1000 ppm (≥0.1000 w%) are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled product.

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

O4 Certified raw materials from oil palms	Yes	No
Does the product contain palm oil or palm kernel oil? This includes by-products, residues, and waste fractions from palm oil industries, such as palm fatty acid distillate and palm effluent sludge. If yes, is this palm oil/palm kernel oil RSPO certified? What is the traceability level? Tick below and state the certificate/licence number:		
No traceability		
Identity Preserved		
Segregated		
Mass Balance		
O5 Classification of ingoing substances		
Does the product contain substances classified with any of the hazard codes below? Incl. all classification variants. For example, H350 also covers classification H350i.	**Yes**	**No**
H420 – Ozone	☐	☐
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.	☐	☐
H334 – Resp. Sens. 1, 1A or 1BB	☐	☐
H317 – Skin Sens. 1, 1A or 1B	☐	☐
H372 – STOT RE 1	☐	☐
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), alkylphenol ethoxylates (APEOs), and other alkylphenol derivates (APD)	☐	☐
Butylated hydroxytoluene (BHT, CAS No. 128-37-0)	☐	☐
Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts	☐	☐
Methyldibromo glutaronitrile (MG, CAS No. 35691-65-7)	☐	☐
Microplastics *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:* *(i) all dimensions of the particles are equal to or less than 5 mm.* *(ii) 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:* *a) 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.* *b) polymers that are biodegradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].* *c) polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].* *d) polymers that do not contain carbon atoms in their chemical structure.*	☐	☐
Nanomaterials/-particles *Defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01): 'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:* *a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;* *b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;* *c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.*	☐	☐
Nitro musks and polycyclic musk compounds	☐	☐
Organic chlorine compounds, hypochlorites and hypochlorous acid	☐	☐
Per- and polyfluoroalkyl substances (PFAS) *Defined as fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group (–CF_3) or a perfluorinated methylene group (–CF_2–) is a PFAS, as described in the OECD recommendations.*	☐	☐
Phosphate, phosphonate, phosphonic acid and phosphoric acid	☐	☐
Potential or identified endocrine disruptors, according to any of the following EU member state initiative "Endocrine Disruptor Lists" List I; II and III	☐	☐
PBT and vPvB substances in accordance with REACH Annex XIII, including substances under investigation according to the ECHA PBT assessment list https://echa.europa.eu/da/pbt	☐	☐
Substances on the REACH Candidate list of SVHC substances https://www.echa.europa.eu/candidate-list-table	☐	☐

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)	☐	☐
O8 Fragrance allergens	**Yes**	**No**
Does the product contain fragrances (incl. plant extracts)?	☐	☐
If yes, have fragrances been added in line with IFRA guidelines? (IFRA, International Fragrance Association, www.ifraorg.org/)	☐	☐
If yes, does the fragrance contain BHT? (see O7) If yes, please state the amount (ppm or % by weight):_____		
If yes, 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? If yes, please send in perfume specifications.	☐	☐
If yes, 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)? If yes, please send in perfume specifications.	☐	☐
O9 Preservatives	**Yes**	**No**
Does the product contain preservatives? If yes, please state name and log Kow/BCF:_____	☐	☐
O11 Long-term environmental effects	**Yes**	**No**
Does the product contain substances classified as environmentally hazardous with H410, H411 and H412? If yes, please state the amount (% by weight) per classification, and for H410 also state the M-factor: _____	☐	☐
O15-O17 Packaging requirements	**Yes**	**No**
Are all parts of the packaging compatible in regards of O15-O17?	☐	☐
If the closure contains silicone: Is the closure used on a PET squeeze bottle?	☐	☐
For labels on PET containers: Does the label cover > 50% of the packaging surface for sizes ≤ 500 ml or > 70% for sizes > 500 ml?	☐	☐
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)? If yes, is the printing ink used for plastic packaging non-bleeding and compliant with EuPIA exclusion policy*? *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 is Yes, state the CAS No. (where possible), chemical name and level (in ppm, % by weight or mg/kg). Also state whether the substance is contained in the form of an impurity or ingoing substance.

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

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

Appendix 2 Declaration from the manufacturer/supplier of the raw material to the hand dishwashing detergent

To be used in conjunction with an application for a licence for the Nordic Ecolabelling of hand dishwashing detergents.

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. Please inform Nordic Ecolabelling if new knowledge arises 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 hand dishwashing detergent including additives (e.g. preservatives and stabilisers) 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 shall be regarded.*

- **Impurities**: Trace levels of pollutants, contaminants and residues from production, incl. production of raw materials that remain in the cosmetic 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 ≥ 1000 ppm (≥0.1000 w%) are always regarded as ingoing substances, regardless of the concentration in the Nordic Swan Ecolabelled product.

Note that if the raw material contains impurities listed in this appendix, write the amount 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.

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 is available from the Nordic Ecolabelling web pages.

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

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

O4 Certified raw materials from oil palms	**Yes**	**No**
Does the raw material contain palm oil or palm kernel oil? This includes by-products, residues, and waste fractions from palm oil industries, such as palm fatty acid distillate and palm effluent sludge. **If yes**, is this palm oil/palm kernel oil RSPO certified? What is the traceability level? Tick below and state the certificate/licence number:	☐	☐
No traceability		
Identity Preserved		
Segregated		
Mass Balance		

O5 Classification of ingoing substances		
Does the raw material contain substances classified with any of the hazard phrases below? Incl. all classification variants. For example, H350 also covers classification H350i.	**Yes**	**No**
H420 – Ozone	☐	☐
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.	☐	☐

H334 – Resp Sens. 1, 1A or 1B	☐	☐
H317 – Skin Sens. 1, 1A or 1B	☐	☐
H372 – STOT RE 1	☐	☐
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 raw material contain any of the following substances?	**Yes**	**No**
Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), alkylphenol ethoxylates (APEOs), and other alkylphenol derivates (APD)	☐	☐
Butylated hydroxytoluene (BHT, CAS No. 128-37-0)	☐	☐
Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts and Diethylenetriamine pentaacetate (DTPA, CAS No. 67-43-6) and its salts	☐	☐
Methyldibromo glutaronitrile (MG, CAS No. 35691-65-7)	☐	☐
Microplastics *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:* *(i) all dimensions of the particles are equal to or less than 5 mm.* *(ii) 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:* *a) 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.* *b) polymers that are biodegradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].* *c) polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].* d) polymers that do not contain carbon atoms in their chemical structure.	☐	☐
Nanomaterials/-particles *Defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01): 'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:* *a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;* *b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;*	☐	☐

c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.		
Nitro musks and polycyclic musk compounds	☐	☐
Organic chlorine compounds, hypochlorites and hypochlorous acid	☐	☐
Per- and polyfluoroalkyl substances (PFAS) *Defined as fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group (–CF_3) or a perfluorinated methylene group (–CF_2–) is a PFAS, as described in the OECD recommendations.*	☐	☐
Phosphate, phosphonate, phosphonic acid and phosphoric acid	☐	☐
Potential or identified endocrine disruptors, according to any of the following EU member state initiative "Endocrine Disruptor Lists" List I; II and III	☐	☐
PBT and vPvB substances in accordance with REACH Annex XIII, including substances under investigation according to the ECHA PBT assessment list https://echa.europa.eu/da/pbt	☐	☐
Substances on the REACH Candidate list of SVHC substances https://www.echa.europa.eu/candidate-list-table	☐	☐
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)	☐	☐
O8 Fragrance allergens	**Yes**	**No**
Does the raw material contain fragrances (incl. plant extracts)?	☐	☐
If yes, have fragrances been added in line with IFRA guidelines? (IFRA, International Fragrance Association, www.ifraorg.org/)	☐	☐
If yes, does the fragrance contain BHT? (see O7) If yes, please state the amount (ppm or % by weight):_____	☐	☐
If yes, 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? If yes, please send in perfume specifications.	☐	☐
If yes, 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)? If yes, please send in perfume specifications.	☐	☐
O9 Preservatives	**Yes**	**No**
Does the raw material contain preservatives? If yes, please state name and log Kow/BCF:_____	☐	☐
O11 Long-term environmental effects	**Yes**	**No**
Does the raw material contain substances classified as environmentally hazardous with H410, H411 and H412? If yes, please state the amount (% by weight) per classification, and for H410 also state the M-factor: _____	☐	☐

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

In the event of any change to the composition of the product, a new declaration of fulfilment of the requirements is to be submitted to Nordic Swan 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 ecotoxic effects and biodegradability

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 hand dishwashing detergents, 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 and its bioconcentration factor (BCF) is >500. If no BCF value has been determined, a substance is considered bioaccumulating if its logKow value ≥ 4.0 according to method 107, 117 or 123 in the OECD Guidelines for the Testing of Chemicals or equivalent method. If the maximum measured BCF ≤ 500, the substance is not considered bioaccumulating even if logKow ≥ 4.0.

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 CD 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.

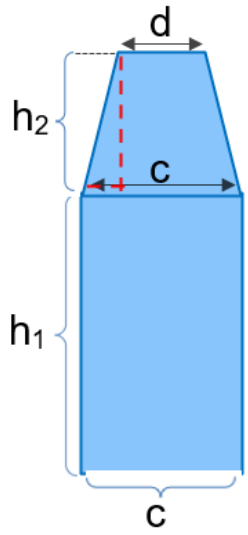
8 Calculation of coverage of label on plastic packaging

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:

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

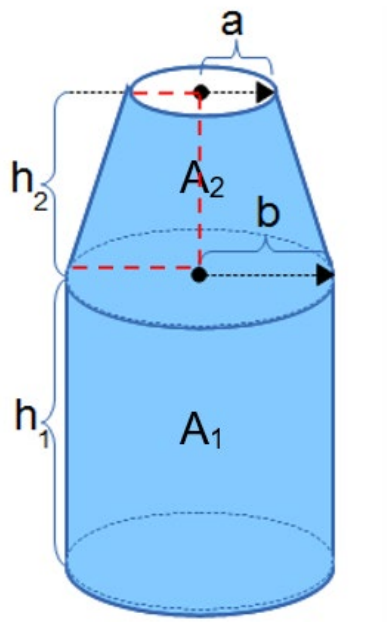
$$Area\ A_2 = \frac{h_2 \cdot (c + d)}{2}$$

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

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

To be used in conjunction with an application for a licence for the Nordic Ecolabelling of hand dishwashing detergents.

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

Producer/distributor
Part of the packaging (container, closure, label)
Packaging material (type of plastic (PE, PP, PET), cardboard etc.)

O15 Rigid plastic packaging: Containers	**Yes**	**No**
Is there metal coverings or metal seals or other metal parts?	☐	☐
Are fillers used? If yes, state concentration and density of the plastic:_____	☐	☐
Is the bottle white or uncoloured?	☐	☐
Is the bottle coloured/tinted with Carbon black?	☐	☐
Does the bottle contain postconsumer recycled material (PCR)? If yes, what is the content of recycled material (in w%):_____	☐	☐
O15 Rigid plastic packaging: Closures (cork/lid, mounted dosing devices/pumps/spray triggers)	**Yes**	**No**
Does the closure contain other plastics than PE, PP or PET? If yes, is the closure a spray trigger? If yes, is the plastic one or more of the following plastics: 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)?	☐ ☐ ☐	☐ ☐ ☐
Are there metal parts in the closure?	☐	☐
Is there PS, PVC or plastics based on other types of halogenated plastics present in the closure?	☐	☐
Are fillers used? If yes, state concentration and density of the plastic:_____	☐	☐
Is the closure coloured black?	☐	☐
Does closure contain silicone? If yes, please state the density of the silicone? _____ If yes, does the silicone contain less than 1000 ppm of D4, D5 and D6?	☐ ☐	☐ ☐
Does the closure contain postconsumer recycled material (PCR)? If yes, what is the content of recycled material (in w%):_____	☐	☐

O16 Labels for rigid plastic packaging	**Yes**	**No**
Please specify the label material and density: _____		
Is the printing ink used non-bleeding and compliant with EuPIA's exclusion policy*? *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 postconsumer recycled material (PCR)? If yes, what is the content of recycled material (in w%): _____	☐	☐
O17 Flexible plastic pouches	**Yes**	**No**
Is the packaging of monomaterial, i.e. not laminates with layers of different material?	☐	☐
Is the pouch white or coloured?	☐	☐
Is the pouch tinted/coloured with Carbon Black?	☐	☐
Are fillers used? 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?	☐	☐
Does the packaging contain postconsumer recycled material (PCR)? If yes, what is the content of recycled material (in w%):_____	☐	☐
Paper and cardboard packaging	**Yes**	**No**
Does the packaging contain postconsumer recycled material (PCR)? If yes, what is the content of recycled material (in w%):_____		

Place and date	Company name or stamp
Responsible person	Signature of responsible person (electronic signature is accepted)
Telephone	Email

Appendix 5 Performance test

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

The purpose of the performance test is to demonstrate the satisfactory ability and capacity of an ecolabelled hand dishwasher detergent. The test procedure compares the test product (subject of the application) and a reference product with respect to cleaning ability and capacity. The use of test results in marketing should be avoided (and only used if the test method is specified in detail).

The framework allows for a wide range of test procedures as long as the requirements below are a part of the test procedure. In the test, washing-up may be done by hand, or a machine may be responsible for the mechanical work. Alternatively, the test may include no mechanical processing. The test is based on the washing of crockery (e.g. plates).

Framework

The test shall be performed according to the following framework. At least five repetitions must be performed in which the test and reference products are compared with one another. Each repetition shall comprise two subtests – one for the test product and one for the reference product. The reference product and the test product shall be anonymous to the tester.

The elements and stages included in each repetition must be decided in advance and must be identical for each repetition (e.g. application of soil, processing and possible rinsing). The temperature and relative humidity of the room must be measured and kept reasonably constant in all repetitions (measured at beginning and end of test).

Reference product
The reference product is defined as a product that at the time is one of the most well established/market-leading hand dishwashing detergents in a Nordic country or in the countries in which the product will be sold.

The reference product must be a product other than the product that is set to be ecolabelled. The reference product must be made by a manufacturer other than the one that produces the applicant product.

The reference product must be purchased specifically for the test. Products for the professional market are to be tested against another professional product, and similarly a consumer product must be compared against another consumer product. If the product is marketed to both the professional and consumer markets, the test is performed against a professional product.

Water test

In addition to the 10 subtests, a further test shall be performed in the same way as the other subtests but that uses water alone (no detergent). The water test shall demonstrate that the chosen test method is suitable for testing the cleaning performance of the hand dishwashing detergent. If the test demonstrates that water cleans equally as well as the hand dishwashing detergents, the test is unsuitable. The water test shall be performed after

testing the test product and reference product respectively. The test is to be performed on the same number of plates as the capacity test. For example, if the average capacity of the reference product is 20 plates and that of the test product is 22 plates, 21 plates shall be used for the water test.

Soil selection and preparation

The soil shall primarily consist of animal and vegetable fats. It should also contain proteins and carbohydrates (e.g. egg and flour). This means that soil should primarily contain fats. The origin or chemical composition of the soil must be described in detail (e.g. olive oil or animal fat). The soil must be homogenous and of even consistency. Enough soil for all 11 subtests must be prepared in one batch.

Water

The water hardness and the calcium-magnesium-ratio must be known. The calcium-magnesium-ration can be determined using deionised/distilled water that is then hardened with known quantities of calcium. The test shall be performed using water of a typical hardness for the area in which the product is to be sold. Justification must be provided for the selection of water hardness.

Water hardness shall be specified in whole German degrees of hardness (°dH).

1˚dH = 10 mg CaO or 7.19 mg MgO (0.179 mmol metal ions/litre) or equivalent quantity of other metal oxides per litre of water.

Preparation of washing water

The volume of water must be determined in litres to one decimal point. The same volume of water must be used in all repetitions. The temperature of the water shall be measured in Celsius at the start and must be the same for all repetitions. The temperature shall be measured at the start and end of the washing cycle.

The test and reference detergent shall be dosed according to the lowest dosage recommended for each product respectively. If there are no dosing instructions for the reference, the dose is set at the same as for the test product. The dosage shall be measured to one decimal point and shall be the same in all repetitions. The detergent must be mixed and completely dissolved in the water.

Hand dishwashing tablets should be tested as in-use solution, when the detergent is used for a full kitchen-sink, following the instructions.

Test procedure

The quantity of soil must be weighed in grams (or smaller unit) to two significant figures for each repetition.

The soil shall be introduced in the same way in each repetition via the crockery to be washed. All processing shall be performed in a predetermined, controlled fashion for all tests, preferably with 20 circular movements on the front and 6 circular movements on the back of the plates. If a different method of processing is used, a description and justification of this must be provided.

Assessment of cleaning capacity

The test must be capable of generating results that provide a measure of capacity, i.e. how long the dishwashing detergent lasts. The test is then stopped at predetermined conditions. The recommended conditions are when there is no more foam, but other indicators may be used. If a different indicator than “no foam” is chosen, this must be described and justified. The number of plates is determined when the predetermined conditions are reached. Either the total number of plates or the number of clean plates can be counted.

Assessment of cleaning ability

The test must be capable of generating results that provide a measure of cleaning ability. This may be through visual, optical, gravimetric or some other relevant method of analysis. The method of analysis and units of measure shall be determined in advance and specified. Visual inspection can be performed using a rating scale.

The following rating scale can be used: Evaluation shall be performed by two people using the same lighting conditions (preferably a 1000-1500 lux lamp). Both the front and reverse of the plate shall be evaluated together:

5 = Completely clean

4 = 1-10 small fat droplets/spots with a maximum combined surface area of 4 mm^2

3 = More than 10 small fat droplets/spots with a combined surface area of 4-50 mm^2

2 = Fatty coating of 50-200 mm^2

1 = Fatty coating of more than 200 mm^2

Results

The cleaning ability and capacity of the reference product and test product shall be documented for each test repetition. A positive result of a test round is obtained when the cleaning ability and capacity is as good or better for the test product compared with the reference product.

The test product is considered to have fulfilled the performance requirements when positive results are obtained in at least 80% of the test rounds (e.g. 4 out of 5). As an alternative, the applicant may use statistical methods and demonstrate with a one-sided 95% confidence range that the test product is as good as or better than the reference product in at least 80% of test rounds.

Documentation

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

- Specification of the temperature and humidity in the test room and details describing how the test person(s) ensured that these conditions were kept constant in all repetitions.
- Description of the composition of the soil and of the procedure used to ensure that the soil was of a homogenous and even consistency.
- Specification of the hardness of the water, and how it was achieved, and specification of the calcium-magnesium ratio.
- Specification of the quantity of water used in each part of the test.

- Water temperature at the start and end of the test.
- Specification of the results of the weighing of the hand dishwashing detergent (test product and reference product) in each repetition and description of the procedure for dissolving the product in the water.
- Specification of the results of the weighing of the soil in each repetition and a description of how the procedure for apply the soil to the plates.
- Description of how the products are kept anonymous from the test individuals.
- Description of the other steps and stages in each individual repetition.
- Description of how cleaning capacity is evaluated / determined.
- Description of how cleaning ability is measured and/or evaluated.
- The partial results from all five repetitions stated in terms of cleaning capacity and ability, including all raw data.
- Results of the water test in which no detergent was used.
- Final results based on this raw data (and, if applicable, a statistical evaluation of the data).