Nordic Ecolabelling for

Indoor paints and varnishes

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Nordic Ecolabelling

Content

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Addresses

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

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What is a Nordic Swan Ecolabelled Indoor paint and varnish?

A Nordic Swan Ecolabelled indoor paint or varnish is amongst the least environmentally harmful within its product group. The Nordic Swan Ecolabel shows that the product fulfils strict environmental and health requirements.

Indoor paints and varnishes labelled with the Nordic Swan Ecolabel contain less environmentally harmful substances and fewer substances with health effects than other indoor paints.

Nordic Swan Ecolabel paints and varnishes are considered to have:

- Strict requirements for solvents (VOC and SVOC).
- Strict requirements for substances dangerous to the environment and for preservatives.
- Does not contain softeners.
- Quality requirements include coverage.

Why choose the Nordic Swan Ecolabel?

- The licencee may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Swan Ecolabel is a simple way of communicating environmental work and commitment to customers.
- The Nordic Swan Ecolabel clarifies the most important environmental impacts and thus shows how a company can cut emissions, resource consumption and waste management.
- Environmentally suitable operations prepare the indoor paints and varnishes for future environmental legislation.
- Nordic Ecolabelling can be seen as providing a business with guidance on the work of environmental improvements.
- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

What can carry the Nordic Swan Ecolabel?

The product group of indoor paints and varnishes shall comprise indoor decorative paints and varnishes, woodstains and related products intended for use by cconsumers and professional users falling under the scope of Directive 2004/42/CE ("the paints directive")[1] of the European Parliament and of the Council (5).

The product group of indoor paints and varnishes shall comprise: floor coatings and floor paints; paint products which are tinted by distributors at the request of consumer (non-professional) or professional decorators, tinting systems, decorative paints in liquid or paste formulas which may have been pre-conditioned, tinted or prepared by the manufacturer to meet consumer's needs, including wood paints, wood and decking stains, masonry coatings and metal finishes primers and undercoats of such product systems as defined in Annex I to Directive 2004/42/CE for indoor usage.

The product group shall not comprise the following products:

- Anti-fouling coatings
- preservation products for wood impregnation
- coatings for particular industrial and professional uses, including heavy-duty coatings, powder coatings, UV curable paint systems
- paints primarily intended for vehicles
- products which primary function is not to form a film over the substrate, e.g. oils and waxes, fillers as defined by EN ISO 4618
- road-marking paints
- anti-rust paints
- products for exterior usage
- products for industrial applications

Exterior products and products for Industrial applications are covered by the Nordic Ecolabelling criteria for chemical building products.

[1] Directive: 2004/42/C http://ec.europa.eu/environment/air/pollutants/stationary/paints/paints_legis.htm (visited 2014-10-10)

How to apply

Application and costs

For information about the application process and fees for this productgroup, please refer to the respective national web site. For addresses see page 2.

What is required?

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

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

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

✉ Enclose

🔑 The 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.

Licence validity

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

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

On-site inspection

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

Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 2 for addresses. Further information and assistance (such as calculation sheets or electronic application help) may be available. Visit the relevant national website for further information.

1 General environmental requirements

The requirements in Chapter 1 “General environmental requirements” apply to all ingoing substances unless otherwise stated.

Ingoing substances/residuals

Ingoing substances are defined, unless stated otherwise, as all substances in the product – including additives (e.g. preservatives or stabilisers) in the raw materials/ingredients, but not residuals from the production, incl. production of raw materials.

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

Raw material

A raw material may consist of one or more ingoing substances. A raw material may e.g. be a drying agent or a neutralising agent. The raw materials are the materials that are bought by the paint producer and mixed to together to generate the final product e.g. the paint.

Preservatives

With the term preservatives is meant all preservatives, biocides and biocidal active substances, including in-can preservatives and dry-film preservatives.

More terms and definitions can be found under chapter "Terms and definitions" in the end of this document.

If a product has or a raw material is approved in the Nordic Swan Ecolabel for chemical building products see appendix 3 in the background document to find out what complimentary information that needs to be collected.

O1 Information about the product

The applicant must give detailed information on the indoor paint and varnish product to which the application relates. The following information is required:

- Describe the product and its application method and the way in which it fulfils the definition of a product that qualifies for a Nordic Swan Ecolabel
- If the product forms part of a component system that jointly ensures the functioning of the product, the entire product must be Nordic Swan Ecolabelled and not simply parts of it (e.g. a tinting system comprising a base and coloured tints or two-component varnishes comprising a base and a hardener). The requirement thus refers to the individual product and not to products in the same range (a range is here e.g. systems for exterior painting comprising primer, undercoat and paint).

- Formulation detailing complete composition with a specification of all ingoing substances (see definition of raw materials and ingoing substances in Chapter 1). The description must include:
  - The trade name of the raw materials
  - The function of each raw material
  - The chemical name and CAS# (if possible) of the ingoing substances
  - Content in % per ingoing substance in the product

☒ Description of the product in accordance with the definition of what may be Nordic Swan Ecolabelled.

☒ Description of how the product is to be used to achieve functionality (as a single component, tinting system or part of a multi-component system) and what application method it is intended for.

☒ Formulation detailing complete composition with a specification of all raw materials and ingoing substances, as set out in Appendix 3.

O2 Classification of the products

The final product shall not be classified and labelled according to table 1 below.

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications and risk phrases. In accordance with Article 15 of Regulation (EC) No 1272/2008 applicants shall therefore ensure that classifications are based on the most recent rules on the classification, labelling and packaging of substances and mixtures.

Table 1 Classification of the product

Classification according to CLP Regulation 1272/2008	
Hazard class and category	**H-phrase**
Toxic to aquatic organisms Category acute 1 Chronic 1-4	H400, H410, H411, H412, H413
Hazardous to the ozone layer	H420
Acute toxicity 1-4	H300, H310, H330, H301, H311, H331, H302, H312, H332
Specific target organ toxicity (STOT) with single and repeated exposure STOT SE 1-2 STOT RE 1-2	H370, H371, H372, H373
Aspiration hazard 1	H304
Respiratory or skin sensitising Resp. Sens. 1, 1A or 1B Skin sens. 1, 1A or 1B	H334, H317 and the product must not contain ingoing substances in quantities that result in the label “Contains (name of sensitising substance). May cause an allergic reaction.”*
Skin corrosion or irritation Skin corr. 1A/1B/1C	H314
Carcinogenic Carc 1A/1B/2	H350, H351
Mutagenic Mut 1A/1B/2	H340, H341

Toxic for reproduction Repr 1A/1B/2	H360, H361, H362
Explosive1.1-1.6	H200, H201, H202, H203, H204, H205
Oxidizing Liquids and solids Ox. Liq. 1-3/Ox. Sol. 1-3	H271, H272
Self-reactive substances and mixtures and Organic Peroxides Type A-EF Self-react. A-EF/Org. Perox. A-EF	H240, H241, H242
Extremely flammable aerosol and liquids Flam Liq 1 /Aerosol 1	H222, H224

Exemption

*The statement “Contains (name of sensitising substance). May produce an allergic reaction" is excepted if it is due to the content of preservatives. See also O5 concerning limits for preservatives.

Note that responsibility for correct classification lies with the manufacturer.

☒ Safety data sheet in accordance with Annex II of REACH (Regulation 1907/2006) for each product in the application.

☒ A declaration of the concentration of the preservatives, if the above exemption for preservatives is used.

O3 Classification of constituent chemical substances

The product must not contain ingoing substances that are classified according to table 2. Classification shall be according to CLP Regulation (No) 1272/2008.

Table 2 Classification of ingoing substances

Classification according to CLP Regulation 1272/2008	
Hazard class and category	**H-phrase**
Carcinogenic Carc 1A/1B/2	H350, H351
Mutagenic Mut 1A/1B/2	H340, H341
Toxic for reproduction Repr 1A/1B/2	H360, H361, H362
Respiratory sensitising 1/1A/1B	H334
Specific target organ toxicity with single exposure STOT SE 1	H370
Specific target organ toxicity with repeated exposure STOT RE 1	H372

Exemptions:

- Preservatives classified with specific target organ toxicity with single or repeated exposure (H370, H372) (further requirements concerning preservatives are stated in O5).
- Formaldehyde (CAS#: 50-00-0) as a residual, maximum content of 10 ppm (0.0010% by weight) in the final product, see separate requirement O6.

- Respirable crystalline silica/quartz classificatied with STOT RE 1 with H372. Respirable crystalline silica can be less than 1% in the raw material, see requirement O10 regarding powder raw materials.
- Glyoxal (CAS#: 107-22-2), if the pH in the final product is above 8.
- The dispersant trimethylol propane (CAS #: 77-99-6) self-classified as H361 in up to 1% in pigments. Time-limited exception valid until 2022-05-31.
- Titanium dioxide (TiO2) which is added in powder form during raw material production (additional requirements for TiO2 is stated in O9).

Note: Zinc pyrithione classified H360D are excempted for a transition period until 2023-01-01 for paint bases and 2024-01-01 for colourants.

☒ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material. Documentation of exemptions for each substance is done in appendix 1 and 2, together with a statement why the substance is present in the product/raw material and other documentation if appropriate.

☒ Safety data sheet for all raw materials in line with Annex II to REACH (Regulation (EC) No 1907/2006).

O4 Environmentally harmful substances

Ingoing substances classified as environmentally harmful with risk phrases H410, H411and/or H412, according to CLP Regulation (No) 1272/2008, are limited in the product according to the following formula (calculation model taken from current classification rules, except that here the limit value is tougher):

$$M*100*H410 + 10*H411 + H412 \leq 9.0\%$$

Where:
H410 is the concentration of substances classified with H410 in percent

H411 is the concentration of substances classified with H411 in percent

H412 is the concentration of substances classified with H412 in percent

Where M is the multiplying factor for H410 linked to the substance's LC50, EC50 or NOEC value and biodegradable read in accordance with Table 3 below (from the CLP classification rules).

Table 3 Concentration limits and multiplying factors for substances classified as H410

Acute toxicity		**Chronic toxicity**		
L(E)C50 value (mg/l)	**M-factor**	**NOEC value (mg/l)**	**M-factor non readily biodegra-dable sub-stances**	**M-factor readily biode-gradable sub-stances**
0,1 < L(E)C50 ≤ 1	1	0,01 < NOEC≤0,1	1	-
0,01 < L(E) C50 ≤ 0,1	10	0,001 < NOEC≤0,01	10	1
0,001 < L(E) C50 ≤ 0,01	100	0,0001 < NOEC≤0,001	100	10
0,0001 < L(E) C50 ≤ 0,001	1000	0,00001 < NOEC≤0,0001	1000	100
0,00001 < L(E) C50 ≤ 0,0001	10 000	0,000001 < NOEC≤0,00001	10 000	1000
Continues with factor 10 intervals		Continues with factor 10 intervals		

If information about a substance's harmfulness to the environment (in the form of data concerning toxicity and biodegradability or toxicity and bioaccumulation) is not available, the substance is treated as a worst case, i.e. as environmentally harmful – H410, and multiplication factor 1000.

For tinting systems a worst case calculation is done with the colour with most tinting paste and the base paint with most environmentally hazardous substances.

Exemptions:
Preservatives and boosters are exempted from the requirement. However, requirement O2 and O5 (for preservatives) must still be fulfilled.

☒ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

☒ Safety data sheet for all raw materials in line with Annex II to REACH (Regulation (EC) No 1907/2006).

☒ Calculation clearly showing that the requirement is fulfilled.

O5 Preservatives

- Only preservatives compliant with Directive 98/8/EC of the European Parliament and of the Council and Regulation (EU) No 528/2012 can be used.
- No preservatives added to the product or its raw materials may be bioaccumulative.

The bioaccumulative properties of a substance can be tested on fish in line with OECD test method 305 A-E. If the bioconcentration factor (BCF) is ≥ 500, the substance is considered to be bioaccumulative. If there is no BCF for a substance, that substance is considered to be bioaccumulative if logKow ≥ 4 under the OECD's guidelines 107 or 117 or equivalent.

Note that if there is a measured BCF value and a logKow value, it is always the highest measured BCF that is used, rather than the logKow value.

- The amounts of preservatives in the products must not exceed the limit values in Table 4a and 4b below. However, requirement O2 must still be fulfilled and it takes superiority over requirement O5.

The amounts of preservatives includes preservatives from raw materials. The limits in table 4a and 4b are the maximum theoretical amount at the time of production. The amount shall be calculated on the basis of the added preservatives and the maximum amount in the raw materials.

For tinting systems a worst case calculation is done with the colour with most tinting paste and the base paint with highest content of preservative and isothiazolinone compounds.

Table 4a Concentration limits for preservatives in the final product.

	Concentration limit
Preservatives totally* (paints, varnishes, base paints with tinting paste etc.)	900 ppm (0.0900% w/w)

**This requirement only applies to preservatives classified with one or more classifications listed in requirement 03 and the total amounts of isothiazolinones from table 4b.*

Table 4b Specific restrictions on isothiazolinones in the final product.

Preservative	Concentration limit
Total amounts of isothiazolinones	600 ppm (0.0600% w/w)
2-methyl-2H-isothiazol-3-one (CAS# 2682-20-4) (MIT**)	15 ppm (0.0015% w/w)
5-Chloro-2-Methyl-2H-Isothiazol-3-one/2-Methyl-2HIsothiazol-3-one (3:1) (CAS#: 55965-84-9) (CMIT/MIT)	15 ppm (0.0015% w/w)

** *Note that the shortening MI may also be used.*

Note that Dithio-2,2'-bis-benzmethylamide (DTBMA) is to be included in the total amount of isothiazolinones.

✉ Documentation showing that none of the preservatives are bioaccumulative.

✉ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

✉ Calculation clearly showing that the requirement concerning preservatives is fulfilled.

O6 Formaldehyde

- Products must not contain actively added formaldehyde (CAS#: 50-00-0).

  Note that the definition of ingoing substances has been waived regarding potential formaldehyde releasing substances.

- The level of free formaldehyde (from formaldehyde not intentionally added) in the final product must not exceed 10 ppm (0.0010% by weight, 10 mg/kg)*.

- In case formaldehyde donors are required for in-can preservation, the level of free formaldehyde must not exceed 25 ppm (0,0025% by weight, 25 mg/kg) in the final product*.

The level of free formaldehyde must be measured for the final product. A calculation based on the contents of free formaldehyde in each raw material cannot be done. The test laboratory must fulfil the requirements in appendix 5.

For tinting systems the colour with the tinting paste and the base paint predicted to contain the highest theoretical amount of formaldehyde (worst case) shall also be determined and measured.

* *Measured with EPA 8315A, VdL-RL03, the Merckoquant method (appendix 2 to RAL-UZ 102), or other equivalent test method.*

✉ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

✉ Test report according to EPA 8315A, VdL-RL03, Merckoquant method (see appendix 2 to RAL-UZ 102), or other equivalent test method for the products showing that requirement is met.

✉ Documentation for that the test laboratory fulfil the requirements in appendix 5.

O7 Residual monomers in polymers

For each polymer present in the product >1 % the quantity of residual monomers* and its classification have to be stated and may be no more than 100 ppm of each classification in table 5.

For tinting systems a worst case calculation is done with the colour with most tinting paste and the base paint with most residual monomers.

* *The quantity of residual monomers is to be stated for newly produced polymers and on the basis of the content in the raw material.*

Table 5 Classification of residual monomers

Classification according to CLP Regulation 1272/2008	
Hazard class and category	**H-phrase**
Carcinogenic Carc 1A/1B/2	H350, H351
Mutagenic Mut 1A/B/2	H340, H341
Toxic for reproduction Repr 1A/1B/2, Lact	H360, H361, H362
Specific target organ toxicity with single exposure STOT SE 1-2	H370, H371
Specific target organ toxicity with repeated exposure STOT RE 1-2	H372, H373
Respiratory sensitisation 1/1A/1B	H334

The classifications are in accordance with the prevailing CLP Regulation EC (No) 1272/2008.

Exemption:

Vinyl acetate (CAS#: 108-05-4) can be in the polymer as residual monomer up to 1000 ppm.

✉ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

O8 Heavy metals

The following heavy metals or heavy metal compounds must not be present in the product or in its raw materials:

- Cadmium
- Lead
- Chromium VI
- Mercury
- Arsenic
- Barium (with the exception of barium sulphate, and other equally insoluble barium compounds)
- Selenium
- Antimony*

Traces of the above mentioned metals from residuals can be included up to 100 ppm (100 mg/kg, 0.0100% by weight) per single metal in the raw material.

* *An exception is made for antimony in pigments contained in a TiO_2 rutile lattice on the following terms: test results must prove that the molecular structure is inert and that the environmental and health effects of the pigment are on the same level as, or better than, the results for C.I Pigment Brown 24 CAS no. 68186-90-3 and C.I Pigment Yellow 53 CAS no. 8007-18-9 in the report: UNEF Publications, OECD SIDS Initial Assessment Profile (www.inchem.org).*

✉ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

✉ For pigment that contains antimony integrated into a TiO_2 rutile lattice, documentation must be submitted to show that the molecular structure is inert and that the environmental and health effects of the pigment are on the same level as, or better than, the results for C.I Pigment Brown 24 CAS no. 68186-90-3 and C.I Pigment Yellow 53 CAS no. 8007-18-9 in the report: UNEF Publications, OECD SIDS Initial Assessment Profile (www.inchem.org).

O9 Titanium dioxide

If the product contains more than 3.0% by weight of titanium dioxide (CAS No: 13463-67-7):

1. The raw material manufacturer must meet the requirements for powder handling according to O10.

2. In addition, emissions from the production of titanium dioxide shall not exceed the values given below during the sulphate process and the chloride process, respectively.

Sulphate process:
SO_X expressed as SO_2: 7.0 kg/tonne TiO_2

Sulphate waste: 500 kg/tonne TiO_2

Chloride process:
When using natural ore: 103 kg chloride waste/tonne TiO_2

When using synthetic ore: 179 kg chloride waste/tonne TiO_2

When using slag ore: 329 kg chloride waste/tonne TiO_2

If more than one type of ore is used, the values apply proportionately to the ore types used.

✉ Declaration, see Appendices 1 and 2, from the manufacturer of the product and the manufacturer of each raw material.

✉ If the product contains titanium dioxide, a calculation is to be submitted showing the amount in % by weight in the final product. If the final product contains more than 3.0% by weight titanium dioxide a description from the titanium dioxide-producer and calculation is to be submitted, clearly showing that the requirement is fulfilled.

✉ Description of how powdered raw materials are handled during the production process.

O10 Powdered raw materials

Raw materials in powder form must be added in a closed system, in a suspension or by means of a method that promotes a “low-dust” working environment e.g. using protective equipment which heavily reduce the dust or completely remove the dust from the raw materials (e.g. exhaust ventilation, personal protective equipment and clear safety instructions).

✉ Description of how powdered raw materials are handled during the production process.

O11 Nanoparticles

a) Nanoparticles (from nanomaterials*) are not permitted in the product.

The following are exempted from the requirement:

- Pigments**

- Naturally occurring inorganic fillers - this applies to fillers covered by annex V point 7 in REACH.
- Synthetic amorphous silica***
- Unmodified calcium carbonate (Ground calcium carbonate, GCC) and precipitated calcium carbonate (PCC))
- Polymer dispersions

* *The definition of nanomaterials follows the European Commission's definition from 18 October 2011 (2011/696/EU): 'Nanomaterial' means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm."*

** *Nano-titanium dioxide (nano-TiO2) is not considered a pigment and is therefore covered by this requirement.*

*** *This applies to unmodified synthetic amorphous silica. Chemically modified colloidal silica can be included in the products as long as the silica particles form aggregates in the final product. The surface treatment of surface-treated nanoparticles must fulfil requirement O3 (classification of constituent chemical substances) and requirement O12 (Other substances excluded from use).*

b) The producer must declare any nanomaterials present in the product.

✉ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

O12 Other substances excluded from use

The product must not contain ingoing substances that are:

- Substances on the Candidate List*.
- Substances evaluated by EU as PBT (Persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative), in accordance with the criteria in annex XIII in REACH.
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects. See link: http://ec.europa.eu/environment/chemicals/endocrine/strategy/substances_en.htm
- Organotin compounds
- Phthalates
- APEO – alkylphenol ethoxylates and alkylphenol derivatives (substances that release alkylphenols on degradation).
- Halogenated organic substances, including perfluorinated substances and polyfluorinated alkylated substances (PFAS)**. Exemptions for:
    - Preservatives that fulfil O5
    - Paint pigments that meet the EU's requirements concerning colourants in food packaging under Resolution AP (89) point 2.5.
    - Dries in oxidative drying paints, see also O3 regarding classifications.
- Isocyanates– Exemption for water-borne polyisocyanates with a chain length of more than 10, where the concentration of isocyanates with a chain length of less than 10 as an impurity is documented.
- Fragrances

** The Candidate List (list of Substances of Very High Concern established according to article 59 of REACH) can be found on the ECHA website at: http://echa.europa.eu/candidate-list-table*

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

☒ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

☒ If halogenated organic pigments are used, a declaration is required from the pigment supplier confirming that the pigment meets the EU's requirement concerning colourants in food packaging under Resolution AP (89) point 2.5.

☒ If water-borne polyisocyanates with a chain length of more than 10, where the concentration of isocyanates with a chain length of less than 10 as an impurity are used, send documentation showing this.

O13 Content of Volatile (VOC) and Semi-volatile Organic Compounds (SVOC)

The maximum content of Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs) shall not exceed the limits given in Table 6.

The content of VOCs and SVOCs shall be determined for the final product and shall include any recommended additions prior to application such as colourants and/or thinners.

For tinting systems the content of VOCs and SVOCs shall be determined for the colour with most tinting paste and the base paint with highest content of VOC and SVOC.

The VOC and SVOC content shall be determined either by testing the final product or by calculation based on the raw materials*.

** The test methods given in ISO 11890-2 shall be used. For the SVOC content, guidance given in appendix 4 regarding test method ISO 11890-2 shall be followed.*

Instead of testing the SVOC content, the emission of Total Semi-Volatile Organic Compounds (TSVOC) can be tested for the final product with test method CEN/TS 16516, EN 16516, ISO 16000-6/-9/-10/-11 or EN 16402 all after 28 days, see table 6a. AgBB, Indoor Air Comfort, Indoor Air Comfort Gold or Blue Angel certification are also accepted as documentation for the level of TSVOC emission.

The test laboratory must fulfil the requirements in appendix 5.

Definitions of VOC and SVOC

Volatile organic compounds (VOC) means any organic compounds having an initial boiling point less than or equal to 250 °C measured at a standard pressure of 101,3 kPa as defined in Directive 2004/42/EC and which, in a capillary column, are eluting up to and including n-Tetradecane ($C_{14}H_{30}$).

Semi volatile organic compounds (SVOCs) means any organic compound having a boiling point greater than 250 °C and less than 370 °C measured at a standard pressure of 101,3 kPa and which, in a capillary column are eluting with a retention range after n-Tetradecane (C14H30) and up to and including n-Docosane ($C_{22}H_{46}$).

Products with the Nordic Swan Ecolabel may display the text 'reduced VOC content' and the VOC content in g/l next to the Ecolabel if they wish.

Table 6. VOC and SVOC content limits

Product description (with subcategory denotation according to Directive 2004/42/EC)	**VOC limits (g/l including water)**	**SVOC limits** (g/l including water)**	
		White paints and varnishes	Tinted paints and varnishes
a. Interior matt walls and ceilings (Gloss < 25@60°)	10	30	40
b. Interior glossy walls and ceilings (Gloss > 25@60°)	40	30	40
d. Interior trim and cladding paints for wood and metal	80	50	60
e. Interior trim varnishes and woodstains, including opaque woodstains	65	30	30
f. Interior minimal build woodstains	50	30	40
g. Primers	15	30	40
h. Binding primers	15	30	40
i. One-pack performance coatings	80	50	60
j. Two-pack reactive performance coatings for specific end use such as floors	80	50	60
l. Decorative effect coatings	80	50	60

****Table 6a. TSVOC emission limits from the final product (alternative to SVOC content requirement in table 6)**

	TSVOC limit (mg/m3 after 28 days)
All products	0.1

☒ Declaration in line with Appendices 1 or 2 from the manufacturer of the product or the manufacturer of each raw material, respectively.

☒ Test report or calculation showing that the content level of VOC and SVOC in the final product in table 6 is fulfilled, based on test of the final product or on all ingoing raw materials using test methods given in ISO 11890-2. For the SVOC content, guidance given in appendix 4 regarding test method ISO 11890-2 shall be followed.

☒ If alternative for content of SVOC is used: Test report showing that the level of TSVOC emission from the final product in table 6a is fulfilled, based on test of the final product using methods given in CEN/TS 16516, EN 16516, ISO 16000-6/-9/-10/-11 or EN 16402 all after 28 days. AgBB, Indoor Air Comfort, Indoor Air Comfort Gold or Blue Angel certification are also accepted as documentation for the level of TSVOC emission.

☒ Documentation for that the test laboratory fulfil the requirements in appendix 5.

O14 Volatile Aromatic Hydrocarbons - VAH

Volatile aromatic hydrocarbons (VAH) must not be actively added to the product, but may occur as residuals to a total maximum of 100 ppm (0.01% w/w, 100 mg/kg) in the final product.

Volatile aromatic hydrocarbons are volatile organic compounds where one or more benzene rings are contained within the molecule.

✉ Declaration in line with Appendices 1 and 2 from the manufacturer of the product and the manufacturer of each raw material.

✉ Calculation of the level of volatile aromatic hydrocarbons in the product (based on data for all ingoing raw materials).

2 Quality requirements

O15 White pigment content

Indoor wall and ceiling paints for which Class 1 and 2 wet scrub resistance* claims are made shall have a white pigment content (white inorganic pigments with a refractive index higher than 1.8) per m^2 of dry film equal to or lower than that described in Table 7a, with 98 % opacity.

All other paints shall have a white pigment content (white inorganic pigments with a refractive index higher than 1.8) per m^2 of dry film equal to or lower than that described in Table 7b, with 98 % opacity.

For tinting systems this requirement only applies to the base paint with the highest white pigment content or for the paint in a paint series with the highest white pigment content.

* *Wet scrub resistance is here defined in accordance with EN 13300 and EN ISO 11998, see requirement O16.*

Table 7a Relationship between wet scrub resistance and TiO_2 content for indoor wall and ceiling paints with claims of wet scrub resistance

Wet scrub resistance	Indoor limit (g/m^2)
Class 1	40
Class 2	36

Table 7b. Limits for white pigment content for products not covered by table 7a

Type of paint	Indoor limit (g/m^2) with 98% opacity
Wall paints	25
Other paints (including ceiling paints)	36

✉ The applicant shall provide documentation showing that the content of white pigments is compliant with this requirement.

✉ For ceiling paints and indoor wall paints the labelling for the packaging, including the accompanying text, shall be provided as evidence regarding claims of wet scrub resistance.

O16 Claims for Wet Scrub Resistance

Only Wet Scrub Resistance class 1 and 2 ecolabelled paints may claim wet scrub resistance on the label or other marketing documentation.

All wall and ceiling paints for which claims of class 1 or 2 in wet scrub is made shall achieve the claimed class according to class 1 or class 2 in wet scrub resistance (WSR) according to EN 13300 and EN ISO 11998.

The test laboratory must fulfil the requirements in appendix 5.

For tinting systems or a paint series with different colours this requirement only have to be demonstrated for one of the paints.

✉ The applicant shall provide a test report according to EN 13300 using the method EN ISO 11998 (Test for cleanability and scrub resistance). For ceiling paints and indoor wall paints the labelling for the packaging, including the accompanying text, shall be provided as evidence regarding claims of wet scrub resistance.

✉ Documentation for that the test laboratory fulfil the requirements in appendix 5.

O17 Spreading rate

The spreading rate should be at least at the levels presented in table 8 below.

The test laboratory must fulfil the requirements in appendix 5.

Table 8. Spreading rate

	Opacity/hiding power	Spreading rate of at least the following
White paints and light-coloured paints (Tri-stimulus (Y-value) > 70%) (including finishes and intermediates)*	Hiding power 98%	8 m^2 per litre of product
Semi-transparent primers	Without opacity or having specific properties** With opacity	6 m^2 per litre of product 8 m^2 per litre of product
Thick decorative coatings (paints that are specially designed to give a three-dimensional decorative effect and are therefore characterised by a very thick coat)	Not relevant	1 m^2 per kg of product
Opaque elastomeric paints	Opaque	4 m^2 per litre of product

* *Base paints to be used with a tinting system.*

** *Opaque primers with specific blocking/sealing, penetrating/binding properties and primers with special adhesion properties.*

- For paint series that are available in more colours the spreading rate shall apply to the whitest colour.
- For tinting systems, this requirement applies only to the white base (the base containing the most TiO_2). In cases where the white base is unable to achieve this requirement, the requirement shall be met after tinting the white base to produce the standard colour RAL 9010.
- For paints that are a part of a tinting system, the applicant must advise the end-user on the product packaging and at the Point of Sale which shade or primer/undercoat (if possible bearing the Nordic Swan Ecolabel/EU Ecolabel) should be used as a basecoat before applying the darker shade.

✉ The applicant shall provide a test report using one of the following:

- The method ISO 6504/1 (Paints and varnishes — determination of hiding power — Part 1: Kubelka-Munk method for white and light-coloured paints) or
- ISO 6504/3 (Part 3: determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate), or
- For paints specially designed to give a three-dimensional decorative effect and characterised by a very thick coat the method NF T 30 073.

✉ For bases used to produce tinted products not evaluated according to the abovementioned requirements, the applicant shall produce evidence of how the end-user will be advised to use a primer and/or grey (or other relevant shade) of undercoat before application of the product.

✉ Documentation for that the test laboratory fulfil the requirements in appendix 5.

O18 Resistance to water

All floor varnishes, floor coatings and floor paints shall have resistance to water, as determined by ISO 2812-3 such that after 24 hours' exposure and 16 hours' recovery no change of gloss or of colour occurs.

✉ The test laboratory must fulfil the requirements in appendix 5.

✉ The applicant shall provide a test report using the method ISO 2812-3.

✉ Documentation for that the test laboratory fulfil the requirements in appendix 5

O19 Adhesion

- Pigmented masonry primers shall score a pass in the EN 24624 (ISO 4624) pull-off test where the cohesive strength of the substrate is less than the adhesive strength of the paint, otherwise the adhesion of the paint must be in excess of a pass value of 1.5 MPa.
- Floor coatings, floor paints, floor primers, masonry primers, transparent primers, metal and wood primers shall score 2 or less in the EN 2409 test for adhesion.

The test laboratory must fulfil the requirements in appendix 5.

The applicant shall evaluate the primer and/or finish alone or both applied together. When testing the finish alone this shall be considered the worst case scenario concerning adhesion.

✉ The applicant shall provide a test report using the method EN ISO 2409 or EN 24624 (ISO 4624) as applicable.

✉ Documentation for that the test laboratory fulfil the requirements in appendix 5.

O20 Abrasion

Floor coatings and floor paints shall have an abrasion resistance not exceeding 70 mg weight loss after 1000 test cycles with a 1000 g load and a CS10 wheel according to EN ISO 7784-2.

Alternatively a test according to ISO 5470-1 with 1000 test cycles with 1000 gram load and the H22 wheel where the weight loss is maximum 3000 mg.

The test laboratory must fulfil the requirements in appendix 5.

✉ The applicant shall provide a test report showing compliance with this requirement using the method EN ISO 7784-2 or ISO 5470-1.

✉ Documentation for that the test laboratory fulfil the requirements in appendix 5.

3 Consumer information, packaging and take-back systems

O21 Consumer information

The following information must be placed on the packaging or enclosed with each individual product:

- The purpose, substrate and other conditions of application for which the product is intended. This shall include advice on preparation, e.g. correct preparation of the substrate or temperature.
- Estimate of "normal" coverage (e.g. l/m^2 or equivalent).
- Recommended preventive safety measures for users, such as safety equipment and ventilation (particularly when working in enclosed spaces or similar).
- Recommendations on cleaning used tools and how waste products from cleaning can best be disposed (to limit water pollution). These recommendations are to be adapted to the product types and areas of application. Pictograms shall also be used where appropriate.
- Recommendations on how the product is to be stored after opening, including safety instructions where relevant.
- Recommendations on the disposal of residual product and packaging.

✉ Label, product sheet or equivalent and description of how the information accompanies each product.

O22 Packaging

- Packaging must be re-sealable, unless documentation can be provided that the entire product will always be used in one go.
- The type of plastic material must be documented by the manufacturer. Product packaging and labels must not contain halogenated plastic.
- Any surface coating of the packaging must not contain halogens.

✉ Photo of the packaging showing that the packaging can be resealed. Or descriptions of whether the entire product is always used in one go.

✉ Description of the packaging type and size.

✉ Declaration from the packaging manufacturer that no halogenated plastics have been used or product data sheets clearly showing that the requirement is met by all parts of the packaging, including lids, caps, etc.

✉ Declaration from the packaging manufacturer that the packaging has not been surface coated, or that the surface coating does not contain halogens.

✉ Declaration from the label producer that no halogenated plastics have been used.

O23 Take-back systems

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

4 Quality management and regulatory requirements

To ensure that Nordic Ecolabelling requirements are fulfilled, the following procedures must be implemented.

If manufacturer's environmental management system is certified to ISO 14 001 or EMAS, and the following procedures implemented, it is sufficient for the accredited auditor to certify that the requirements are observed.

O24 Laws and regulations

The licensee shall ensure compliance with all applicable local laws and provisions at all production facilities for the Nordic Swan Ecolabelled product, e.g. with regard to safety, working environment, environmental legislation and site specific requirements/concessions.

✉ Declaration from the licensee (signed application form where this is stated) that the requirement is fulfilled.

O25 Licence administrators

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

✉ Organisational chart showing who is responsible for the above.

O26 Documentation

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

🔑 On-site inspection.

O27 Product quality

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

✉ Procedures for collating and, where necessary, dealing with claims and complaints regarding the quality of the Nordic Swan Ecolabelled product.

O28 Planned changes

Written notice of planned product and marketing changes that affect the Nordic Ecolabelling requirements must be given to Nordic Ecolabelling.

✉ Procedures detailing how planned product and marketing changes are dealt with.

O29 Unforeseen non-conformities

Unforeseen non-conformities that affect Nordic Ecolabelling requirements must be reported to Nordic Ecolabelling in writing and logged.

✉ Procedures detailing how unforeseen non-conformities are handled.

O30 Traceability

The licensee must have a traceability system for the production of the Nordic Swan Ecolabelled product.

✉ Description of/procedures for fulfilment of the requirement.

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 out at www.svanen.se/regulations/ or at www.nordic-ecolabel.org/regulations/

Follow-up inspections

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

The licence may be revoked if it is evident that the indoor paint or varnishes does not meet the requirements.

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

History of the criteria

Nordic Ecolabelling adopted the criteria for indoor paint or varnishes on 5 November 2015. The criteria are valid until 31 December 2019.

On 6 April 2016 editorial changes of ingoing substances have been made in paragraph 1 and appendix 1 and 2.

Nordic Ecolabelling's Criteria Group decided per capsulam on 1 June 2016 to include exemptions in requirement O3 and O12 regarding driers. The new version is called 3.1.

Nordic Ecolabelling's Criteria Group decided per capsulam on 7 September 2016 and 11 October to allow that raw materials classify with acute tox. At the same time several exemptions were removed from O3 and classification with acute tox was deleted from the list of residual monomers in polymers that can not be present in 100 ppm in O7. Prohibition of metal packaging for pacs of less than 1 liter was deleted too O22. The new version is called 3.2.

Nordic Ecolabelling's Criteria Group decided per capsulam on 7 February 2017 to change the requirement O7 Residual monomers in polymers. The change is published in the version 3.2.

Nordic Ecolabelling's Criteria Group decided per capsulam on 15 March 2017 to change the requirement O3 Classification of ingoing chemical substances. The new version is called 3.3.

On the 9 October 2017 Nordic Ecolabelling's Criteria Group decided to remove O23 Tack-back systems. And on 15 May 2018 Nordic Ecolabelling's Criteria Group

decided to prolong the criteria with 18 months to the 30 June 2021 and to adjust requirement O6 rearding formaldehyde releasing substances. The new version is called 3.4.

Nordic Ecolabelling decided on 31 March 2020 to prolong the criteria with 24 months to the 30 June 2023. The new version is called 3.5.

Nordic Ecolabelling decided on 19 May 2020 to allow a time-based exemption to O3 Classification of constituent chemical substances. Furthermore, the requirements for O5 Preservatives have been adjusted to harmonize isothiazolinones with current EU-legislation. The new version is called 3.6.

On 23 June 2020, Nordic Ecolabelling decided to adjust the requirements for O3 Classification of chemical substances included in as constituents, O9 Titanium dioxide and O11 Nanoparticles. The new version is called 3.7.

On the 23 of February and the 23 of March, Nordic Ecolabelling decided to adjust the following requirements:

- O3 Classification of constituent chemical substances: Transition period for zinc pyrithione in paint bases until 2023-01-01 and until 2024-01-01 in colourants.
- O4 Environmentally Harmful Substances: Boosters are now excempted from the requirement.
- O5 Preservatives: The limit for total amount of preservation is raised from 700 ppm to 900 ppm. The limit for total amount of isothiazolinones is raised from 500 ppm to 600 ppm.
- O6 Formaldehyde: Specific limit of 25 ppm formaldehyde from formaldehyde donors that are used as in-can preservation is introduced.

Furthermore, Nordic Ecolabelling decided to prolong the criteria with 24 months to the 30 June 2024. The new version is called 3.8.

New criteria

- Make a new MEKA and RPS (Relevance, Potential, Steerability) analysis.
- Evaluate the limits of preservatives.
- Evaluate the limit of ingoing substances classified as environmentally harmful.
- Evaluate the possibilities to set requirements to renewable raw materials.
- Evaluate the exemption for vinyl acetate in the requirement regarding residual monomers in polymers.
- Evaluate the exemption for glyoxal in the requirement regarding classification of ingoing chemical substances.
- Evaluate the requirements and limits of the content levels of SVOC and emission of TSVOC.

Terms and definitions

For the purpose of this document, the following definitions shall apply (mainly from article 2 in the EU Ecolabel criteria document):

(1) **'Paint'** means a pigmented coating material, supplied in a liquid paste or powder form, which, when applied to a substrate, forms an opaque film having protective, decorative or specific technical properties and after application dries to a solid, adherent and protective coating;

(2) '**Varnish'** means a clear coating material which, when applied to a substrate forms a solid transparent film having protective, decorative or specific technical properties and after application dries to a solid, adherent and protective coating;

(3) **'Decorative paints and varnishes'** means paints and varnishes that are applied in-situ to buildings, their trim and fittings, for decorative and protective purposes;

(4) '**Lasure**' means coatings producing a transparent or semi-transparent film for decoration and protection of wood against weathering, which enables maintenance to be carried out easily;

(5) '**Tinting system'** means a method for preparing coloured paints by mixing a 'base' with coloured tints;

(6) '**Masonry coating'** means a coating that produces a decorative and protective film for use on concrete, paintable brickwork, blockwork, rendering, calcium silicate board or fibre-reinforced cement;

(7) **'Binding primers'** means coatings designed to stabilise loose substrate particles or impact hydrophobic properties;

(8) '**UV curable paint system'** means the hardening of coating materials by exposure to artificial ultra-violet radiation;

(9) '**Powder coating'** means protective or decorative coating formed by the application of a coating powder to a substrate and fusion to give a continuous film;

(10) **Ingoing substances'** are defined as all substances in the product – including additives (e.g. preservatives or stabilisers) in the raw materials, but not residuals from production of raw materials.

(11) **Residuals'** residuals are defined as residuals, pollutants and contaminants derived from production, including production of the raw materials, which are present in the final product in amounts less than 100 ppm (0,0100 w-%, 100 mg/kg), but not substances added to the raw materials or product intentionally and with a purpose – regardless of amount. Residuals in the raw materials above 1,0% are regarded as ingoing substances. Known substances released from the raw materials are also regarded as ingoing substances.

(12) '**Raw material'** a raw material may consist of one or more ingoing substances. A raw material may e.g. be a drying agent or a neutralising agent.

The raw materials are the materials that are bought by the paint producer and mixed to together to generate the final product e.g. the paint.

(13) '**Preservatives** means all preservatives, biocides and biocidal active substances, including in-can preservatives and dry-film preservatives.

(14) **'In-can preservatives'** are products used for the preservation of manufactured products during storage by the control of microbial deterioration to ensure their shelf life;

(15)'**Dry-film preservatives**' are products used for the preservation of films or coatings by the control of microbial deterioration or algal growth in order to protect the initial properties of the surface of materials or objects;

(16)'**Anti-skinning substances**' are additives that are added to the coating materials to prevent skinning during production or storage of the coating material;

(17) '**Volatile organic compounds**' (VOC) means any organic compounds having an initial boiling point less than or equal to 250 °C measured at a standard pressure of 101.3 kPa as defined in Directive 2004/42/EC and which, in a capillary column, are eluting up to and including Tetradecane ($C_{14}H_{30}$) for non-polar systems or Diethyl adipate ($C_{10}H_{18}O_4$) for polar systems;

(18) '**Semi volatile organic compounds**' (SVOCs) means any organic compound having a boiling point of greater than 250 °C and which, in a capillary column (1) are eluting with a retention range between n-Tetradecane ($C_{14}H_{30}$) and n-Docosane ($C_{22}H_{46}$) for non-polar systems and diethyl adipate ($C_{10}H_{18}O_4$) and methyl palmitate ($C_{17}H_{34}O_2$) for polar systems;

(19) '**White and light coloured**' paints are those with a tri-stimulus (Y-value) > 70%;

(20) '**Gloss paints**' are those which at an angle of incidence of 60° show a reflectance of ≥ 60;

(21) '**Mid sheen paints**' (also referred to as semi-gloss, satin, semi matt) are those which at an angle of incidence of 60° or at 85° show a reflectance of < 60 and ≥ 10;

(22) '**Matt paints**' are those which at an angle of incidence of 85° show a reflectance of < 10;

(23) '**Dead matt paints**' are those which at an angle of incidence of 85° show a reflectance of < 5;

(24) '**Transparent**' and 'semi-transparent' means a film with a contrast ratio of < 98% at 120µ wet film thickness;

(25) '**Opaque**' means a film with a contrast ratio of > 98% at 120µ wet film thickness.

Appendix 1 Declaration from the manufacturer of the indoor paint or varnish

To be used in conjunction with an application for a licence for the Nordic Ecolabelling of indoor paint and varnishes. To complete the following declaration, you will need declarations for all raw materials (Appendix 2 or equivalent declaration).

Declaration is made by the chemical supplier based to the best of his/her knowledge at the given time, also based on information from raw material manufacturers, recipe and available knowledge on the chemical product 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: _____

Product's function/product group (e.g. paint, masonry coatings):

_____

Ingoing substances are defined as, unless stated otherwise, all substances in the product – including additives (e.g. preservatives or stabilisers) in the raw materials/ingredients, but not residuals from production, incl. production of raw materials).

Residuals from production, incl. production of raw materials are defined as residuals, pollutants and contaminants derived from the production, incl. production of the raw materials, which are present in the final product in amounts less than 100 ppm (0,0100 w-%, 100 mg/kg), but not substances added to the raw materials or product intentionally and with a purpose – regardless of amount. Residuals in the raw materials above 1,0 % are regarded as ingoing substances. Known substances released from the ingoing substances are also regarded as ingoing substances.

O3: Does the product contain substances classified with any of the hazard phrases below?	**Yes**	**No**
H350 – Carcinogenic, hazard category 1A and 1B H351 – Carcinogenic, hazard category 2	☐	☐
H340 – May cause genetic defects, hazard category 1A and 1B H341 – May cause genetic defects, hazard category 2	☐	☐
H360 – Toxic for reproduction, hazard category 1A and 1B H361 – Toxic for reproduction, hazard category 2 H362 – Toxic for reproduction – effects on or through breastfeeding (supplementary category)	☐	☐
H334 – Respiratory sensitising	☐	☐
STOT SE 1 H370 STOT RE 1 H372	☐	☐

If yes, please for each specify which substance, CAS-no. (if possible), function (if appropriate), classification, if substance is added or a residue, and amount in ppm:
(If substance is exempted and additional documentation is needed, please attach this)
(If it is residual monomers in polymers, please state in point 07 instead)

_____

_____

_____

_____

_____

Yes ☐ No ☐

O4: Does the product contain any substances classified as harmful to the environment with the following risk phrases or combinations of them?

H410– Aquatic Chronic 1
H411– Aquatic Chronic 2
H412– Aquatic Chronic 3

If yes, please for each classification specify which substance and CAS no., if substance is a preservative or booster and amount in ppm:

_____

_____

_____

_____

_____

_____

Yes ☐ No ☐

O4: Does the product fulfill the requirement regarding maximum content of substances classified as harmful to the environment?

Please do calculation below clearly showing that requirement is fulfilled:

_____

_____

_____

_____

_____

_____

	Yes	No
O5: Does the product contain any preservatives?	☐	☐
If yes, please state:	☐	☐

Do the preservativs comply with Directive 98/8/EC of the European Parliament and of the Council and Regulation (EU) No 528/2012:

Specify each preservative, CAS-no. and amount in ppm for each:

_____

_____

_____

_____

_____

BCF or logKow value of each preservative:

_____

_____

_____

_____

_____

	Yes	No
O5: Does the product fulfill the requirement regarding maximum contens of preservatives, total isothiazolinones, MIT and CMIT/MIT?	☐	☐

Please do calculation below clearly showing that requirement is fulfilled:

_____

_____

_____

_____

_____

_____

	Yes	No
O6: Does the product contain actively added formaldehyde?	☐	☐
O6: Does the product contain more than 10 ppm formaldehyde?	☐	☐
If yes, is it due to preservatives that are formaldehyde donors required as an in-can preservative? - and is the formaldehyde level below 25 ppm?	☐	☐

Please attach test report according to Merckoquant method (see appendix 2 to RAL-UZ 102), EPA 8315A or other equivalent test method.

Yes ☐ **No** ☐

O7: Does the product contain residual monomer in polymers present in the product >1 % classified with any of these hazard phrases H350, H351, H340, H341, H360, H361, H362, H370, H371, H372, H373, and/or H334?

If yes, please state the quantity in ppm of residual monomers in newly produced polymers and based on the content in the raw material:

(If vinyl acetate is present in an amount over 100 ppm, please also state the amount in ppm in each polymer)

_____

_____

_____

_____

☐ ☐

O8: Does the product contain any heavy metals (cadmium, lead, chromium^{VI}, mercury, arsenic, barium, selenium, antimony)?

Traces of the above-mentioned metals from residuals can be included up to 100 ppm (100 mg/kg, 0.0100% by weight) per single metal in the raw material.

- Barium sulphate and other insoluble barium compounds are exempted.

- An exception is made for antimony in pigments contained in a TiO2 rutile lattice on the following terms: test results must prove that the molecular structure is inert and that the environmental and health effects of the pigment are on the same level as, or better than, the results for C.I Pigment Brown 24 CAS no. 68186-90-3 and C.I Pigment Yellow 53
CAS no. 8007-18-9 in the report: UNEF Publications, OECD SIDS Initial Assessment Profile (www.inchem.org)∗.

If yes, please state the heavy metals, if add or residual and the amount in ppm for each:

(∗For antimony in pigments that are excepted by the above terms, please attach test according to Test method DIN 53770-1 or equivalent, showing that terms are fulfilled)

_____

_____

_____

Yes ☐ **No** ☐

O9: Does the product contain titanium dioxide?

If yes, please state amount in % by weight: (If the product contains more than 3.0% by weight titanium dioxide, a description from the titanium dioxide producer and calculation is to be attach, clearly showing that the requirement is fulfilled)

_____

Yes ☐ **No** ☐

O11: Does the product contain any nanomaterials according to the EU definition, 2011/696/EU, (including nanotitanium dioxide)?

Definition: 'Nanomaterial' means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm."

The following are exempted from the requirement:

- Pigments∗
- Naturally occurring inorganic fillers - this applies to fillers covered by Annex V point 7 in REACH.
- Synthetic amorphous silica∗∗

- Unmodified calcium carbonate (Ground calcium carbonate (GCC) and precipitated calcium carbonate (PCC)
- Polymer dispersions

∗ Nano titanium dioxide (nano-TiO2) is not considered a pigment and is therefore covered by this requirement.

∗∗This applies to unmodified synthetic amorphous silica. Chemically modified colloidal silica can be included in the products as long as the silica particles form aggregates in the final product. The surface treatment of surface-treated nanoparticles must fulfil requirement O3 (classification of constituent chemical substances) and requirement O12 (Other substances excluded from use).

If yes, please state if one of the above exceptions apply and add additional information if needed:

_____

_____

O12: Does the product contain any of the following substances?	**Yes**	**No**
• **Substances on the candidate list** (The Candidate List can be found on the ECHA website at: http://echa.europa.eu/candidate-list-table)	☐	☐
• Substances evaluated by EU as PBT (Persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative), in accordance with the criteria in Annex XIII in REACH.	☐	☐
• Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects. The list can be read in its entirety at http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm, see appendix L	☐	☐
• Organotin compounds	☐	☐
• Phthalates	☐	☐
• APEO – alkylphenol ethoxylates and alkylphenol derivatives (substances that release alkylphenols on degradation).	☐	☐
• Halogenated organic substances, including perfluorinated substances and polyperfluorinated alkylated substances (PFAS) exempted o Preservatives that fulfil O5, o paint pigments that meet the EU's requirements concerning colourants in food packaging under Resolution AP (89) point 2.5 and o dries in oxidative drying paints (note: see O3).	☐	☐
• Isocyanates - Water-based polyisocyanates with a chain length of more than 10 are exempted, where the concentration of isocyanates with a chain length of less than 10 as an impurity is documented.	☐	☐
• Fragrances	☐	☐

(If an exception apply as above, please attach documentation as appropriate)

O13: VOC and SVOC

Please state:	**Yes**	**No**
Product description (with subcategory denotation according to Directive 2004/42/EC):		
• Tinted paints and varnishes	☐	☐
• Interior matt walls and ceilings (Gloss < 25@60°)	☐	☐
• Interior glossy walls and ceilings (Gloss > 25@60°)	☐	☐
• Interior/Exterior trim and cladding paints for wood and metal	☐	☐
• Interior trim varnishes and woodstains, including opaque woodstains	☐	☐
• Interior and Exterior minimal build woodstains	☐	☐
• Primers	☐	☐
• Binding primers	☐	☐
• One-pack performance coatings	☐	☐
• Two-pack reactive performance coatings for specific end use such as floors	☐	☐
• Decorative effect coatings	☐	☐

Please state the VOC content in g/l including water of the final product (use method ISO 11890-2)**:

_____

Please state the SVOC content in g/l including water** **or the emission of TSVOC** in mg/m3 after 28 days*** of the final product:

_____

** Attach ISO 11890-2 test report for the final product or calculation based on all ingoing raw materials.

*** Attach CEN/TS 16516, EN 16516, ISO 16000-6/-9/-10/-11 or EN 16402 test report for the final product. Or AgBB, Indoor Air Comfort, Indoor Air Comfort Gold or Blue Angel certification for the final product.

O14: Does the product contains any VAH?	**Yes** ☐	**No** ☐

If yes, please state if actively added or a residue and amount in ppm:

_____

O23: Take-back systems	**Yes**	**No**
Are any of these systems used:		
• PYR (Finland)	☐	☐
• Grønt Punkt (Norway)	☐	☐
• FTi AB (formerly REPA) or TMR AB(Sweden)	☐	☐
• Other system	☐	☐

If other system is used, please state: Name of system, country and attach documentation showing that the system is equivalent to the above mentioned systems:

_____

_____

_____

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

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

Appendix 2 Declaration from the manufacturer of the raw material

To be used in conjunction with an application for a licence for the Nordic Ecolabelling of indoor paint and varnishes.

Declaration is made by the chemical supplier based to the best of his/her knowledge at the given time, also based on information from raw material manufacturers, recipe and available knowledge on the chemical product 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.

Raw material name: _____

Raw material's function: _____

Ingoing substances are defined as, unless stated otherwise, all substances in the product – including additives (e.g. preservatives or stabilisers) in the raw materials/ingredients, but not residuals from production, incl. production of raw materials).

Residuals from production, incl. production of raw materials are defined as residuals, pollutants and contaminants derived from the production, incl. production of the raw materials, which are present in the final product in amounts less than 100 ppm (0,0100 w-%, 100 mg/kg), but not substances added to the raw materials or product intentionally and with a purpose – regardless of amount. Residuals in the raw materials above 1,0 % are regarded as ingoing substances. Known substances released from the ingoing substances are also regarded as ingoing substances.

O3: Does the raw material contain substances classified with any of the hazard phrases below?	**Yes**	**No**
H350 – Carcinogenic, hazard category 1A and 1B	☐	☐
H351 – Carcinogenic, hazard category 2		
H340 – May cause genetic defects, hazard category 1A and 1B H341 – May cause genetic defects, hazard category 2	☐	☐
H360 – Toxic for reproduction, hazard category 1A and 1B H361 – Toxic for reproduction, hazard category 2 H362 – Toxic for reproduction – effects on or through breastfeeding (supplementary category)	☐	☐
H334 – Respiratory sensitising	☐	☐
STOT SE 1 H370 STOT RE 1 H372	☐	☐

If yes, please for each specify which substance, if substance is added or a residue, CAS-no. (if possible), function (if appropriate), classification and amount in ppm:
(If it is residual monomers in polymers, please state in point 07 instead)

_____

_____

_____

O4: Does the raw material contain any substances classified as harmful to the environment with the following risk phrases or combinations of them?	**Yes**	**No**
H410– Aquatic Chronic 1 H411– Aquatic Chronic 2 H412– Aquatic Chronic 3	☐	☐

If yes, please for each classification specify which substance, if substance is a preservative and amount in ppm:

_____

_____

_____

_____

O5: Does the raw material contain any preservatives?	**Yes**	**No**
	☐	☐
If yes, please state:	☐	☐

Is the preservativ compliant with Directive 98/8/EC of the European Parliament and of the Council and Regulation (EU) No 528/2012**:**

Specify each preservative, CAS-no. and amount in ppm for each:

_____

_____

_____

BCF or logKow value of each preservative:

_____

_____

_____

O6: Does the raw material contain added formaldehyde?	**Yes**	**No**
	☐	☐

O7: Does the raw material contain residual monomer in polymers present in the product > 1 % classified with any of the hazard phrases below?	**Yes**	**No**
H350 – Carcinogenic, hazard category 1A and 1B H351 – Carcinogenic, hazard category 2	☐	☐
H340 – May cause genetic defects, hazard category 1A and 1B H341 – May cause genetic defects, hazard category 2	☐	☐
H360 – Toxic for reproduction, hazard category 1A and 1B H361 – Toxic for reproduction, hazard category 2 H362 - Toxic for reproduction – effects on or through breastfeeding (supplementary category)	☐	☐

STOT SE 1 H370 ☐ ☐
STOT SE 2 H371
STOT RE 1 H372
STOT RE 2 H373

H334 – Respiratory sensitisation ☐ ☐

If yes, please state for each polymer the level of residual monomers (to be stated for newly produced polymers and on the basis of the content in the raw material) with each of the above classifications in ppm:
(If vinyl acetate as residual monomer is present, please state this seperately together with amount in ppm)

_____

_____

_____

	Yes	No
O8: Does the raw material contain any heavy metals (cadmium, lead, chromium^{VI}, mercury, arsenic, barium, selenium, antimony)?	☐	☐

Traces of the above-mentioned metals from residuals can be included up to 100 ppm (100 mg/kg, 0.0100% by weight) per single metal in the raw material.

- Barium sulphate and other insoluble barium compounds are exempted.

- An exception is made for antimony in pigments contained in a TiO2 rutile lattice on the following terms: test results must prove that the molecular structure is inert and that the environmental and health effects of the pigment are on the same level as, or better than, the results for C.I Pigment Brown 24 CAS no. 68186-90-3 and C.I Pigment Yellow 53 CAS no. 8007-18-9 in the report: UNEF Publications, OECD SIDS Initial Assessment Profile (www.inchem.org)∗.

If yes, please state the heavy metals, if added or residual and the amount in ppm for each:
(∗For antimony in pigments that are excepted by the above terms, please attach test according to Test method DIN 53770-1 or equivalent, showing that terms are fulfilled)

_____

_____

_____

	Yes	No
O9: Does the raw material contain titanium dioxide?	☐	☐

If yes, please state amount in ppm:

_____

	Yes	No
O11: Does the raw material contain any nanomaterials according to the EU definition, 2011/696/EU, (including nanotitanium dioxide)?	☐	☐

Definition: 'Nanomaterial' means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm."

The following are exempted from the requirement:

- Pigments*
- Naturally occurring inorganic fillers - this applies to fillers covered by Annex V point 7 in REACH.
- Synthetic amorphous silica**
- Unmodified calcium carbonate (ground calcium carbonate (GCC) and precipitated calcium carbonate (PCC))
- Polymer dispersions

** Nano-titanium dioxide (nano-TiO2) is not considered a pigment and is therefore covered by this requirement.*

***This applies to unmodified synthetic amorphous silica. Chemically modified colloidal silica can be included in the products as long as the silica particles form aggregates in the final product. The surface treatment of surface-treated nanoparticles must fulfil requirement O3 (classification of constituent chemical substances) and requirement O12 (Other substances excluded from use).*

If yes, please state if one of the above exceptions apply and add additional information if needed:

_____

_____

O12: Does the raw material contain any of the following substances?	**Yes**	**No**
• Substances on the candidate list (The Candidate List can be found on the ECHA website at: http://echa.europa.eu/candidate-list-table)	☐	☐
• Substances evaluated by EU as PBT (Persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative), in accordance with the criteria in Annex XIII in REACH.	☐	☐
• Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects. The list can be read in its entirety at http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm, See Appendix L S	☐	☐
• Organotin compounds	☐	☐
• Phthalates	☐	☐
• APEO – alkylphenol ethoxylates and alkylphenol derivatives (substances that release alkylphenols on degradation).	☐	☐
• Halogenated organic substances, including perfluorinated substances and polyperfluorinated alkylated substances (PFAS)exempted ○ Preservatives that fulfil O5 ○ paint pigments that meet the EU's requirements concerning colourants in food packaging under Resolution AP (89) point 2.5 and ○ dries in oxidative drying paints (note: see O3).	☐	☐
• Isocyanates Water-based polyisocyanates with a chain length of more than 10 are exempted, where the concentration of isocyanates with a chain length of less than 10 as an impurity is documented.	☐	☐
• Fragrances	☐	☐

(If an exception apply as above, please attach documentation as appropriate)

O13: Does the raw material contain any VOC* and/or SVOC*? (If the contents of SVOC is unknown, please state this)	**Yes**	**No**
	☐	☐

**Definitions of VOC and SVOC*
Volatile organic compounds (VOC) means any organic compounds having an initial boiling point less than or equal to 250 °C measured at a standard pressure of 101,3 kPa as defined in Directive 2004/42/EC and which, in a capillary column, are eluting up to and including n-Tetradecane (C14H30).

Semi volatile organic compounds (SVOCs) means any organic compound having a boiling point greater than 250 °C and less than 370 °C measured at a standard pressure of 101,3 kPa and which, in a capillary column are eluting with a retention range after n-Tetradecane (C14H30) and up to and including n-Docosane (C22H46).

If yes, please state amount in g/l for VOC:

_____

If yes, please state amount in g/l for SVOC:
(If the contents of SVOC is unknown, please state this)

_____

	Yes	No
O14: Does the raw material contain any VAH?	☐	☐

If yes, please state if actively added or a residue and amount in ppm:

_____

Place and date:	**Company name/stamp:**
Responsible person:	**Signature of responsible person:**
Phone:	**Email:**

Appendix 3 Example of recipe structure

Example of recipe structure to be used when applying for the Nordic Ecolabelling indoor paint and varnishes

Paint or varnish Name: Xxx				Paint or varnished Formula nr. Xxx						
Raw material refe-rence nr.	Com-pany name	Raw materia l name:	Function in the paint/var nish	CAS nr.	Substance content	% sub-stance	CAS nr.	Classifi-cation peer substanc e	Raw material content in the paint/varni sh	Substance content in the paint/varni sh
1...	-	Water	Solvent	7732-18-5	Water	100,000	7732-18-5	-	14,97	14,9700
2...	Xxx	Xxx	pH regu-lator	1310-73-2	Sodium hydroxide	95,000	1310-73-2	H314	9	8,5500
					Water	5,000	7732-18-5	-		0,4500
3...	Xxx	Xxx	Disper-sing agents	-	Acrylic Polymers	30,000	-	-	7	2,1000
					Water	69,995	7732-18-5	-		4,9000
					1,2-Benzisothiazol-3(2H)-one	0,005	2634-33-5	H314, H317, H412		0,0004
4...	Xxx	Xxx	Pigment	xxxx-xx-x	Titanium dioxide	96,000	13463-67-7	-	20	19,2000
					Aluminium hydroxide	4,000	21645-51-2	-		0,8000
And so on										

Appendix 4 VOC and SVOC test method information (requirement O13)

Note that ISO 17895 has now been superseded by ISO 11890-2. This new standard shall be used.

The ISO 11890-2 test method for VOCs has been specified in the requirement for use also to quantify SVOC content. In order to do this and improve reproducibility of test results between laboratories a number of modifications to the test are described here:

This guidance document interprets the specifications of ISO 11890-2 to allow the running of a test to quantify paint SVOC content, either alone or in one run together with an ISO 11890-2 VOC test, so as to evaluate compliance with the requirements of the EU Ecolabel. This guidance should therefore be read alongside ISO 11890-2, but with the modified sample preparation method, apparatus and parameters specified taking precedence.

Sample preparation:
An organic solvent suitable for diluting the sample shall be used. It shall have a purity of at least 99% by mass. The recommended dilution solvent is methanol 100%. If necessary, the sample can be stirred during 30 minutes with application of ultrasound in order to achieve a homogenous liquid phase, or by mechanically stirring during two hours followed by centrifugation or a filtration step using a PTFE filter type for paints containing large, undissolved particles. In the case that a homogenous liquid phase cannot be achieved using methanol 100% then another suitable dilution solvent, such as acetonitrile or tetrahydrofuran, shall be used.

Note:
The marker compounds to be used are n-tetradecane (n-C14) and n-Docosane (n-C22). It may be necessary to prepare a marker solution containing these compounds in acetone due to the limited solubility of n-Docosane in acetonitrile.

Apparatus:

Capillary column:

- - The preferred choice of column shall be one made of fused silica coated with 5% phenyl / 95% dimethyl polysiloxane (slightly polar type, DB5 or equivalent).
- - A column coated with 100% dimethyl polysiloxane (non-polar type, DB1 or equivalent) may be used if it can be shown to perform better for predominantly non-polar paint ingredients.

Note:
A suitable combination of column length (30m or 60m), diameter and temperature programme shall be selected such that compounds in the sample and the markers elute in the order of their increasing boiling points. A column length of 60m may be used to improve the elution order for the slightly polar column type.

Oven:

- Oven initial temperature: between 40 and 100°C
- Isothermal holding time: between 2 and 5 min
- Heating rate: between 3 and 20°C/min
- Oven final temperature: between 280 and 325°C
- Isothermal holding time: > 2 min
- Flow in the column: between 1 and 2 ml/min

Detector:

- identification by mass spectrometer
- quantification by flame ionization detector (FID)
- FID detector temperature: Final oven temperature or higher

Carrier gas:

- helium

Hot injection system:

- injector temperature : between 250 and 280°C
- injection volume: between 1 and 2 µl

Calibration:

- the preferred internal standard for quantification of SVOC peaks shall be n-tetradecane (n-C14)
- An alternative internal standard, 1,2-diethoxyethane (also named ethylene glycol diethyl ether) can be used in order to achieve improved recovery values when analysing water-based paints.

Note:

If the calibration procedures are run in an appropriate manner the selection of the internal standard should have no impact on the test result. However, it is important to ensure that the internal standard does not overlap or hide any peaks arising from the sample itself. It must therefore show a complete separation from other peaks in the chromatogram. A large choice of internal standards is thus possible but internal standards having very low boiling points (e.g. acetone…) or very high boiling points (C22 and more…) must be excluded to avoid any discriminatory phenomenon in the injector.

- All SVOCs shall be identified as far as achievable, and then quantification shall be performed with their authentic calibration standards, as specified for VOCs in ISO 11890-2, or via their relative response factors.
- Remaining unknown SVOC peaks shall be quantified using the response factor of diethyl adipate, expressed in diethyl adipate equivalents.

Appendix 5 Requirements on the analysis laboratory

The analysis laboratory used shall be certified according to standard EN ISO 17025 or have official GLP status.

Company's own laboratory may act as a test laboratory if:

- The manufacturer has a quality management system encompassing sampling and analysis and has been certified to ISO 9000.
- The test method for performance test is part of the quality system.
- Nordic Ecolabelling shall have access to all raw data from performance testing.
- However, for TSVOC emission test in requirement O13, the analysis laboratory used shall be certified according to standard EN ISO 17025 or have official GLP status.