**EN**

## ANNEX II

## EU Ecolabel criteria for awarding the EU Ecolabel to performance coatings and related products

The EU Ecolabel criteria target the best paint and varnish products on the market, in terms of environmental performance. The criteria focus on the main environmental impacts associated with the life cycle of these products and promote circular economy aspects.

### Assessment and verification requirements

For the EU Ecolabel to be awarded to a specific product, the product shall comply with each requirement. The applicant shall provide a written confirmation stating that all the criteria are fulfilled.

Specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent bodies shall preferentially recognise attestations that are issued by bodies accredited in accordance with the relevant harmonised standard for testing and calibration laboratories, and verifications by bodies that are accredited in accordance with the relevant harmonised standard for bodies certifying products, processes, and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications or site inspections to check compliance with these criteria.

Changes in suppliers and production sites pertaining to products to which the EU Ecolabel has been awarded shall be notified to competent bodies, together with supporting information to enable verification of continued compliance with the criteria.

As pre-requisite, the product shall meet all respective legal requirements of the country or countries in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The following information shall be provided together with the application for the EU Ecolabel:

(a) A description of the product formulation(s), with a % composition of the ingredients used (this shall be subject to a non-disclosure agreement between the applicant and the Competent Body).

(b) Safety data sheets for the ingredients used in the paint and varnish formulations.

(c) If deemed necessary, details of the ingredient composition of supplied ingredients and materials, or any other information associated with the production of supplied ingredients and materials that is necessary for demonstrating compliance with the EU Ecolabel criteria, shall be provided by the suppliers or producers of those ingredients and materials.

(d) A description of the packaging format(s) used, the volume(s) of product held and the packaging material(s) used.

(e) The number of individual products associated with the same base formulation covered by the same EU Ecolabel license shall be clearly stated, for example, each different packaging size shall be counted as an individual product, as shall each individual colour that is based on the same base paint formulation.

For the purpose of this Annex, the following definitions shall apply:

(1) 'Binding primers', according to Directive 2004/42/CE, means coatings designed to stabilize loose substrate particles or impart hydrophobic properties and/or to protect wood against blue stain.

(2) 'Coatings for exterior walls of mineral substrate' means, according to Directive 2004/42/CE, coatings designed for application to outdoor walls of masonry, brick, or stucco;

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

(4) 'Dry-film preservatives' are active substances within the meaning of Article 3(1)(c) of Regulation (EU) No 528/2012 that are for use in product-type 7 as described in Annex V to that Regulation, in particular 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;

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

(6) 'Impurities' means unintended constituents (residuals, pollutants, contaminants, by-products etc.) that remain in the EU Ecolabelled product in concentrations less than 100 ppm (0,0100 % w/w, 100 mg/kg). Impurities in ingredients means unintended constituents (residuals, pollutants, contaminants, by-products etc.) that remain in the supplied ingredient in concentrations less than 1000 ppm (0,100 % w/w, 1000 mg/kg).

(7) 'In-can preservatives' are active substances within the meaning of Article 3(1)(c) of Regulation (EU) No 528/2012 of the European Parliament and of the Council that are for use in product-type 6 as described in Annex V to that Regulation. They are in particular used for the preservation of manufactured products during storage by the control of microbial deterioration to ensure their shelf life and used for the preservation of tints that will be dispensed from machines;

(8) 'Ingoing substances' means constituents (as pure substances or as part of a mixture, and regardless of amount) that are intentionally added to achieve or influence certain properties of the final product or its ingredients. Substances known to be released from ingoing substances after addition (e.g. formaldehyde from preservatives and arylamine from azodyes and azopigments) shall also be regarded as ingoing substances. Impurities present in the final product or in supplied ingredients in concentrations above the limits permitted for being considered as impurities, shall instead be considered as ingoing substances."

(9) 'Interior/exterior trim and cladding paints for wood, metal or plastic', according to Directive 2004/42/CE, means coatings designed for application to trim and cladding which produce an opaque film. These coatings are designed for either a wood, metal, or plastic substrate;

(10) 'Interior/exterior trim varnishes and woodstains', according to Directive 2004/42/CE, means coatings designed for application to trim which produce a transparent or semi-transparent film for decoration and protection of wood, metal, and plastics;
(11) 'Lasure', according to ISO 4618:2014, means a coating material containing small amounts of a suitable pigment and/or extender and used to form a transparent or semi-transparent film for decoration and/or protection of the substrate;
(12) 'Light-coloured paint', according to ISO 6504-1:2019, means a coating with tristimulus values Y and $Y_{10}$ greater than 25, measured with a spectrophotometer on a black and white substrate, where tristimulus values are meant, as defined in ISO 11664-2.2007, as amounts of the three reference stimuli, in a given trichromatic system, required to match the colour of the stimulus considered (in CIE standard colorimetric systems, the tristimulus values are represented by the symbols, X, Y, Z, $X_{10}$, $Y_{10}$ and $Z_{10}$.
(13) 'Masonry coating' means a coating that produce a decorative and protective film for use on concrete, paintable brickwork, blockwork, rendering, calcium silicate board or fibre-reinforced cement;
(14) 'Matt or glossy coatings for interior walls and ceilings' means coatings designed for application to indoor walls and ceilings, which deliver a dead matt, matt, semi-matt, satin, semi-gloss, or gloss finish;
(15) 'Matt paints' are those which at an angle of incidence of 85° show a reflectance of $< 10$ and $\geq 5$;
(16) 'Microplastics' means small pieces of plastic, usually smaller than 5mm;
(17) '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 $\geq 10$;
(18) 'Minimal build woodstains', according to Directive 2004/42/CE, means woodstains which, in accordance with EN 927-1:1996, have a mean thickness of less than 5 µm when tested according to ISO 2808:1997, method 5A;
(19) 'Opaque' means a film with a contrast ratio of $\geq 98$ % at 120µ wet film thickness.
(20) 'PFAS' means per- and polyfluoroalkyl substances (PFASs) defined as: Any substance that contains at least one fully fluorinated methyl (CF3-) or methylene (-CF2-) carbon atom (without any H/Cl/Br/I attached to it)
(21) '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 ($C_{14}H_{30}$ ) and up to and including n-Docosane ($C_{22}H_{46}$);
(22) 'Transparent' and 'semi-transparent' means a film with a contrast ratio of $< 98$ % at 120µ wet film thickness;
(23) '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 ($C_{14}H_{30}$);
(24) 'White and light coloured' paints are those with a tri-stimulus (Y- value) > 70 %.

**Criterion 1: Titanium Dioxide production**

If the product contains more than 3,0 % w/w of titanium dioxide ($TiO_2$), the emissions to air and water from the production of any titanium dioxide pigment used shall meet the relevant requirements listed below for the respective production processes:

*Table 1: Requirements for Titanium Dioxide production*

| **Parameter and analytical method** | **Sulphate process** | **Chloride process** |
|---|---|---|
| Emissions of dust to air (EN 13284) | 0,40 kg/t TiO2 pigment | 0,66 kg/t TiO2 pigment |
| Emissions of SO2 to air (EN 14791) | 4,5 kg/t TiO2 pigment | n/a |
| Emissions of HCl to air (ISO 15713) | n/a | 0,70 kg/t TiO2 pigment |
| Emissions of SO4 to water (ISO 22743) | 300 kg $SO_4^{2-}$/t $TiO_2$ pigment | n/a |
| Emissions of Cl to water (ISO 9279) | n/a | 103 kg $Cl^-$/t $TiO_2$ pigment(1)<br>179 kg $Cl^-$/t $TiO_2$ pigment(2)<br>329 kg $Cl^-$/t $TiO_2$ pigment(3) |
| Low dust working environment | To be demonstrated | To be demonstrated |
| (1) When ore used is >95% TiO2 content<br>(2) When ore use is 90-95% TiO2 content<br>(3) When ore used is <90% TiO2 content | | |

In cases where limits are different depending on the purity of the ore used, and when the ore(s) used vary in percentages during the period that data was reported for, the limit values will apply in proportion to the weighted average % TiO2 content of the different ores used.

Emissions to air shall be counted from point source(s)[1] where emissions can be continuously or periodically monitored from a fixed sampling point after any exhaust gas abatement system(s). Emissions to water shall be monitored by sampling of the effluent prior to its entry into any natural watercourse or settling lagoon.

A low dust working environment shall, as a minimum, include the follows aspects:

— A risk assessment for the workplace that identifies all the main areas of potential dust emission and worker exposure to dust.

[1] Point sources for the chloride process are considered as milling, chlorination, oxidation and micronisation stages. Point sources for the sulphate process are considered as the milling, digestion, calcination and micronisation stages.

— Storage and handling of dry and powdered raw materials in enclosed areas and/or in closed spaces maintained under a negative air pressure differential and with any suspended dust being collected in cyclones, bag filters or similar dust separation systems.

— Cleaning protocols for regular cleaning of dust from indoor surfaces using either water sprays or vacuum devices for dust removal (sweeping of dry dust should not be carried out). Any vacuum devices should be fitted with HEPA filters[2], not standard filters.

— Provision of an enclosed storage area for all dewatered sludge or filter cake prior to recovery operations, prior to sale, prior to shipment for reuse, prior to reuse onsite or prior to shipment and disposal to landfill.

— Provision of appropriate training to employees about good practice for dust control.

— Provision of adequate personal protective equipment to employees and visitors.

**Assessment and verification**

The applicant shall declare the content of $TiO_2$ used in each of the product formulations subject to the EU Ecolabel license application. For any products with more than 3,0 % w/w $TiO_2$ pigment content, the applicant shall also declare the supplier or suppliers of the $TiO_2$ used in those products.

The applicant declaration shall be supported by declarations from their $TiO_2$ supplier(s) (and the original $TiO_2$ producer(s), if different) stating the measures in place to ensure a low dust working environment, the type of $TiO_2$ production process used, the applicable $TiO_2$ content range of ore, if necessary, used and a statement of annual average emissions to air and water for the relevant parameters listed in the table above. If test data for emissions has not been collected using the EN or ISO standards defined in the table above, a statement from the testing laboratory must be provided saying which standard method was used instead and why that method can be considered as equivalent or more comprehensive than the methods listed above.

The declaration from the TiO2 producer shall include a basic calculation about how the annual average emissions for the last complete calendar year or rolling 12-month period were obtained. In cases of continuous monitoring, the annual average emission concentrations shall be derived from daily average concentrations. For periodically monitored emissions, at least 3 samples must be taken in each 12-month period and the average results shall be considered as representative of the production process. Any periodic sampling must be taken during periods of stable operation that are representative of normal performance for the production of the TiO2 pigments used in the EU Ecolabel paint products.

For emissions to air, concentrations shall be expressed in units of mg/Nm3 at XX% O2 content and multiplied by a specific emission air flow rate in units of Nm3/tonne TiO2 pigment production for the same time period that the data was collected. If there is more than one exhaust gas abatement system for major point sources of emissions to air, emissions from the clean air from each abatement system shall be counted and added.

For emissions to water, measured concentrations in units of g/m3 shall be multiplied by a specific wastewater flow rate in units of m3/tonne TiO2 pigment production for the same time period that the data was collected.

[2] HEPA filter standards for “High Efficiency Particulate Air” filter.

**Criterion 2: Efficiency in use requirements**

"In order to demonstrate the efficiency in use of performance coatings and related products, the following tests per type of product, as indicated in Table 2 and detailed in the criterion text later, shall be undertaken."

*Table X. Performance requirements for different kinds of paints and varnishes*

| Criteria | Performance coating categories (with their subcategories identified according to the Directive 2004/42/EC) | | | | Waterproofing coatings ?? |
|---|---|---|---|---|---|
| | Floor covering paints (i,j) | Floor covering varnishes (i,j) | Anti-corrosion finishing coats (i,j) | Anti-graffiti finishing coats (i,j) | |
| 2(a) Spreading rate | Yes | No | If opaque | If opaque | If opaque |
| 2(b) Wet scrub resistance and white pigment content | Yes | No | If opaque | If opaque | If opaque |
| 2(c) Resistance to water | Yes | Yes | Yes | Yes | Yes |
| 2(d) Adhesion | If opaque | If opaque | If opaque | If opaque | If opaque |
| 2(e) Abrasion | Yes | Yes | If for metal flooring | No | If for floors |
| 2(f) Weathering | If outdoors | If outdoors | If outdoors | If outdoors | If outdoors |
| 2(g) Corrosion resistance | No | No | Yes | If for metal substrate | If for metal substrate |



2(a) Spreading rate

*Note: This requirement does not apply to varnishes, lasures, transparent adhesion primers or any other transparent or semi-transparent coatings.*

Spreading rate requirements shall apply to white and light-coloured paint products. For paints that are available in more colours in the same family of products, the spreading rate shall apply to the lightest colour.

White paints and light-coloured paints, including finishing coats and intermediate coats, shall have a spreading rate of at least 8 m2 per litre of product for indoor paints and 6 m2 for outdoor paints while ensuring a hiding power of at least 98 % according to ISO 6504-1 or ISO 6504-3. Products marketed for both indoor and outdoor application shall meet the higher spreading rate requirement of at least 8 m2 per litre.

For tinting systems, this criterion applies only to the white base (the base containing the most TiO2). In cases where the white base is unable to achieve this requirement, the criterion 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 POS which shade or primer/undercoat (if possible, bearing the EU Eco-label) should be used as a basecoat before applying the darker shade.

Opaque primers and undercoats shall have a spreading rate of at least 8 m2 per litre of product. A lower spreading rate of 6 m2 per litre of product applies to opaque primers with specific blocking, sealing, penetrating, binding or special adhesion properties.

Opaque elastomeric paints shall have a spreading rate of at least 4 m2 per litre of product.

**Assessment and verification:** the applicant shall provide a test report using the method ISO 6504-1 (Paints and varnishes — determination of hiding power — Part 1: Kubelka-Munk method for white and light-coloured paints) or 6504-3 (Part 3: determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate).

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.

2(b) Wet scrub resistance and white pigment content

*Note: This criterion only applies to paint products and, in the case of families of paint products with multiple shades, only to the base paints. For the purposes of this criterion, the term "white pigment", shall be considered to refer only to pigments with a refractive index higher than 1.8.*

Any EU Ecolabel paint products that claim wet scrub resistance must meet the requirements for class 1 or class 2 according to the procedure defined in ISO 11998 and the classification system of EN 13300 and comply with the respective upper limits for white pigment content.

Table X. Requirements for wet scrub resistance and white pigment content for paint products

| Wet scrub resistance claim? | Wet scrub resistance | White pigment content |
|---|---|---|
| Yes (indoor paints) | Class 1 | $\leq 40$ g/m$^2$* |
| Yes (outdoor paints) | Class 1 or 2 | $\leq 38$ g/m$^2$* |
| Yes (indoor paints) | Class 2 | $\leq 36$ g/m$^2$* |
| No (indoor or outdoor) | n/a | $\leq 25$ g/m$^2$* |

* The m2 refers to 1m2 of dry film with an opacity of at least 98% according to ISO 6504.

**Assessment and verification**:

The applicant shall declare the total content of white pigments with a refractive index >1,8 in the final product or base paint formulations that are subject to the EU Ecolabel license application. This information shall be provided in terms of the chemical name and CAS number of the white pigment, its declared refractive index, its concentration in g/L of paint product and the density of the paint, in g/L. The spreading rate of the paint product, in L/m$^2$

for a dry-film of at least 98% opacity according to ISO 6504, shall also be stated. Multiplying the white pigment concentration (in g/L) by the spreading rate (in $L/m^2$) will produce white pigment levels in units of $g/m^2$ that can be compared to the limits in the table above.

Except in cases where the content of white pigments is < 25,0 $g/m^2$ and no claims of wet scrub resistance are made, the applicant shall also provide results of wet scrub resistance testing according to ISO 11998 that show that the products meet the applicable class 1 or class 2 resistance requirements defined in EN 13300.

2(c) Resistance to water

*Note: This requirement applies to all varnish and woodstain products except for minimal build woodstains.*

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

**Assessment and verification:**

The applicant shall provide a declaration of compliance with the requirement for any varnish or woodstain products included in their license application.

The applicant declaration shall be supported by copies of ISO 2812-3 test report(s) that cover the licensed product or family of products, including reported results for change of colour and change of gloss according to EN ISO 4628-1 and ISO 2813, respectively.

No change of gloss shall be considered as the gloss value of the exposed sample not being more than 5% different to the control sample when measured according to ISO 2813.

No change of colour shall be considered as a visual rating of exposed samples and control samples, with the exposed sample obtaining a rating of 0 when measured for quantity of defects and a rating of 0 when measured for size of defects according to the classification system of EN ISO 4628-1.

If the exemption for minimal build woodstains is applied, the applicant shall justify the exemption by providing test reports according to ISO 2808, method 5A, that show the thickness of the coating layer to be less than 5µm.

2(d) Adhesion

*Note: This criterion applies to opaque primers and binding primers for masonry coatings and to undercoats for wood or metal trim and cladding paints. In cases of multiple shades in a family of products, the base paint, an intermediate shade and one of the darkest shades need to be tested.*

Pigmented masonry primers for exterior uses shall score a pass in the 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.

Interior masonry primers, metal and wood undercoats shall score 2 or less in the EN ISO 2409 test for adhesion.

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.

**Assessment and verification:**

The applicant shall provide a declaration of compliance with the requirement for any opaque masonry primer, binding primer, wood undercoat or metal undercoat products included in their license application. The declaration shall be supported by copies of EN ISO 2409 or ISO 4624 test reports, as applicable.

2(e) Abrasion

*Note: This criterion applies to floor covering paints and varnishes. In cases of multiple shades in a family of floor covering paints, the base paint, an intermediate shade and one of the darkest shades need to be tested.*

A weight loss of ≤ 70 mg shall be observed when floor coatings are exposed to 1000 test cycles with a 1000 g load and a CS10 wheel according to EN ISO 7784-2.

**Assessment and verification:**

The applicant shall provide a declaration of compliance with the requirement for floor coating products included in their license application. The declaration shall be supported by copies of EN ISO 7784-2 test reports.

2(f) Weathering

*Note: This criterion applies to outdoor paints and varnishes.*

All outdoor paints or varnishes shall be exposed to artificial weathering in apparatus including fluorescent UV lamps and condensation or water spray according to ISO 16474-3. They shall be exposed to test conditions for 1000 hours with cycling conditions of: UVA 4 h/60 °C + humidity 4 h/50 °C.

Alternatively, outdoor wood finishes and outdoor wood varnishes shall be exposed to weathering for 1000 hours in the QUV accelerated weathering apparatus with cyclic exposure with UV(A) radiation and spraying according to EN 927-6.

After weathering, the exposed films shall comply with the requirements specified in the table below.

Table X. Requirements for wet scrub resistance and white pigment content for paint products

| **Property** | **Requirement (after weathering)** | **Scope of products covered/not covered** |
|---|---|---|
| Colour change according to ISO 11664-6 | Colour change, $\Delta E \leq 4$ | Not applicable to varnishes and base paints. |
| Decrease of gloss according to ISO 2813 | ≤ 30% decrease compared to initial value | Not applicable to mid-sheen or matt finishing coats with initial gloss value of <60% at 60° angle of incidence |
| Chalking according to EN ISO 4628-6 | A score of ≤ 2 | Only applicable to outdoor masonry, wood and metal finishing coats. |
| Flaking according to EN ISO 4628-5 | Flake density: ≤ 2<br>Flake size: ≤ 2 | |

| | | |
|---|---|---|
| Cracking according to EN ISO 4628-4 | Crack quantity: ≤ 2<br>Crack size: ≤ 3 | |
| Blistering according to EN ISO 4628-2 | Blister density: ≤ 3<br>Blister size: ≤ 3 | |

**Assessment and verification:**

The applicant shall provide a declaration of compliance with the relevant requirements for any outdoor paint or varnish products included in their license application. The declaration shall be supported by copies of test reports that detail the weathering test method used (being in compliance with ISO 16474-3 or EN 927-6) and provide results of changes in properties after weathering, as applicable.

2(f) Corrosion resistance

*Note: This criterion only applies to anti-corrosion performance coatings and related products.*

Anti-corrosion paints and coating systems shall be exposed to simulated corrosion stresses on the metallic substrates and use environments (e.g. C2, C3, C4 or C5 as per EN 12944-6) for which their use is recommended. Corrosion stresses applied in testing shall correspond to the "high" level for each category, which is as follows:

Table X. Requirements for corrosion resistance testing for anti-corrosion paints and coating systems

| **Corrosivity category** | **Test regime 1** | | **Test regime 2** |
|---|---|---|---|
| | **ISO 6270-1 (water condensation, hours)** | **ISO 9227 (neutral salt spray, hours)** | **Annex B (cyclic ageing test, hours)** |
| C2 (high) | 120 | - | - |
| C3 (high) | 240 | 480 | - |
| C4 (high) | 480 | 720 | - |
| C5 (high) | 720 | 1440 | 1680 |

After exposure, the coated surfaces shall be examined and be found to comply with the following requirements:
- A rating of 3 or better (i.e. 0, 1 or 2) for size of blisters according to EN ISO 4628-2.
- A rating of 3 or better (i.e. 0, 1 or 2) for quantity of blisters according to EN ISO 4628-2.
- A rating of Ri2 or better (i.e. Ri0 or Ri1) for degree of rusting according to EN ISO 4628-3.

**Assessment and verification:**

The applicant shall provide a declaration of non-applicability or of compliance with the relevant requirements for any relevant product(s) included in their license application. Any declaration of compliance shall be supported by copies of test reports according to EN 12944-6, EN ISO 4628-2 and EN ISO 4628-3.

**Criterion 3: Content of Volatile and Semi-volatile Organic Compounds (VOCs, SVOCs)**

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

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

Products with a VOC content that is in accordance with the limits in Table X may display the text 'reduced VOC content' and the VOC content in g/l next to the Ecolabel.

*Table X: VOC and SVOC content limit*

| **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)** |
| i. One-pack performance coatings | 40 | 44 |
| j. Multi-pack reactive performance coatings for specific end use such as floors | 65 | 45 |
| Anti-rust paints | 70 | 50 |
| Waterproofing coatings | ?? | ?? |

The VOC content shall be determined either by calculation based on the ingredients and raw materials or by using the methods given in ISO 11890-2 or, alternatively for products with a VOC content of less than 1.0 g/L, the methods given in ISO 17895. The SVOC content shall be determined using the method given in ISO 11890-2. In the case of products used both indoors and outdoors the strictest SVOC limit value for indoor paints and varnishes shall prevail.

**Assessment and verification:** the applicant shall provide a declaration of compliance supported by calculations of VOC and SVOC contents based on the ingredients and raw materials used in the ready to use product. Alternatively, the VOC and SVOC contents of the ready to use product shall be communicated via a representative test report or reports using the methods given in ISO 11890-2 or ISO 17895 and results shall demonstrate compliance with the relevant limits.

**Criterion 4: Restriction of hazardous substances and mixtures**

Note: These criteria apply to the final product and any components therein and, unless specified otherwise, applies equally to all paint and varnish products included in the scope.

**4(a) Restrictions on Substances of Very High Concern (SVHCs**)

The final product formulation shall not contain any ingoing substances or mixtures that meet the criteria referred to in Article 57 of Regulation (EC) No 1907/2006 that have been identified according to the procedure described in Article 59 of that Regulation and included in the candidate list for substances of very high concern for authorisation.

**Assessment and verification:**

The applicant shall provide a signed declaration that the final product and any supplied ingredients therein do not contain any SVHCs as ingoing substances. The declaration shall be supported by safety data sheets of all supplied ingredients used to produce the final product and declarations from the chemical suppliers.

The list of substances identified as SVHCs and included in the candidate list in accordance with Article 59 of Regulation (EC) No 1907/2006 can be found here:

https://www.echa.europa.eu/candidate-list-table

Reference to the list shall be made on the submission date of the EU Ecolabel application.

For impurities identified as SVHCs in ingredients, the concentration of the impurity and an assumed retention factor of 100%, shall be used to estimate the quantity of the SVHC impurity remaining in the final product. Impurities that are SVHCs cannot be present in the paint or varnish product above 0.0100% w/w or in any ingredient in concentrations exceeding 0,100% w/w. Any deviation from a retention factor of 100% for an SVHC impurity (e.g. solvent evaporation) or chemical modification) must be supported by adequate justifications.

**4(b)General restrictions based on classifications according to specific hazard classifications defined in Regulation (EC) No 1272/2008.**

(1) Final product

The final product shall not be classified as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the aquatic environment and associated with any of the hazard statement codes stated in Table X. The only exception permitted to this rule shall be the H412 and H413 hazards, and only in the case of outdoor paints or varnishes and only due to levels of dry film preservatives needed.

(2) Ingoing substances

Unless derogated in Table Y, any ingoing substances or mixtures that are present in concentrations exceeding 0,010 % weight be weight of the final product formulation shall not have been assigned any of the hazard classes, categories and associated hazard statement codes stated in Table X, in accordance with Regulation (EC) No 1272/2008.

*Table X. Excluded hazard classes, categories and associated hazard statement codes*

| Carcinogenic, mutagenic or toxic for reproduction | |
|---|---|
| Categories 1A and 1B | Category 2 |
| H340: May cause genetic defects | H341: Suspected of causing genetic defects |
| H350: May cause cancer | H351: Suspected of causing cancer |
| H350i: May cause cancer by inhalation | |
| H360F: May damage fertility | H361f: Suspected of damaging fertility |
| H360D: May damage the unborn child | H361d: Suspected of damaging the unborn child |
| H360FD: May damage fertility. May damage the unborn child | H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child |
| H360Fd: May damage fertility. Suspected of | H362: May cause harm to breast fed children |

| | |
|---|---|
| damaging the unborn child. | |
| H360Df: May damage the unborn child. Suspected of damaging fertility. | |
| Acute toxicity | |
| Categories 1 and 2 | Category 3 |
| H300: Fatal if swallowed | H301: Toxic if swallowed |
| H310: Fatal in contact with skin | H311: Toxic in contact with skin |
| H330: Fatal if inhaled | H331: Toxic if inhaled |
| H304: May be fatal if swallowed and enters airways | EUH070: Toxic by eye contact |
| Specific target organ toxicity | |
| Category 1 | Category 2 |
| H370: Causes damage to organs | H371: May cause damage to organs |
| H372: Causes damage to organs through prolonged or repeated exposure | H373: May cause damage to organs through prolonged or repeated exposure |
| Respiratory and skin sensitization | |
| Category 1A and 1B | |
| H317: May cause an allergic skin reaction | |
| H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled | |
| Hazardous to the aquatic environment | |
| Categories 1 and 2 | Categories 3 and 4 |
| H400: Very toxic to aquatic life | H412: Harmful to aquatic life with long-lasting effects |
| H410: Very toxic to aquatic life with long-lasting effects | H413: May cause long-lasting effects to aquatic life |
| H411: Toxic to aquatic life with long-lasting effects | |
| Hazardous to the ozone layer | |
| H420: Harms public health and the environment by destroying ozone in the upper atmosphere | |
| Endocrine disruptors for human health and the environment | |
| Category 1 | Category 2 |
| EUH380: May cause endocrine disruption in humans | EUH381: Suspected of causing endocrine disruption in humans |
| EUH430: May cause endocrine disruption in the environment | EUH431: Suspected of causing endocrine disruption in the environment. |
| Persistent, Bioaccumulative and Toxic | |
| PBT | vPvB |
| EUH440: Accumulates in the environment and living organisms including in humans | EUH441: Strongly accumulates in the environment and living organisms including in humans |

| Persistent, Mobile and Toxic | |
|---|---|
| PMT | vPvM |
| EUH450: Can cause long-lasting and diffuse contamination of water resources | EUH451: Can cause very long-lasting and diffuse contamination of water resources |

Table Y. Derogations to restrictions on ingoing substances and mixtures that are classified with one or more of the restricted hazards listed in Table X and are present in concentrations greater than 0,010% (weight by weight) of the final product formulation.

| Substance type, substance name and CAS number | Derogated hazard code(s) | Derogation conditions |
|---|---|---|
| Preservatives and preservative stabilisers | | |
| Note for combined preservative limits: the maximum quantity of any combination of in-can preservatives that are approved or that have an initial application for approval in progress under Regulation (EC) No 528/2012 for Product Type 6 applications shall be 0,080 % weight by weight of the final product.<br><br>Any permitted use of dry-film preservatives shall be considered as being independent of the allowance for in-can preservatives. | | |
| In-can preservative:<br><br>N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS No 2372-82-9) | H301, H373, H400, H410 | *See horizontal derogation condition at foot of table<br><br>Cannot be present in the final product formulation in quantities exceeding 0,050 % (weight by weight). |
| In-can preservative:<br><br>Sodium pyrithione (CAS No 3811-73-2) | H311, H317, H331, H372, H400, H411, EUH070 | *See horizontal derogation condition at foot of table<br><br>Can only be used up to 0,050 % weight by weight in the final product. |
| In-can preservative:<br><br>Bronopol (CAS No 52-51-7); | H301, H317, H331, H400, H411 | *See horizontal derogation condition at foot of table<br><br>The use of any formaldehyde releasing preservatives must be declared by the applicant. Bronopol cannot be added in concentrations >0,0320 % weight by weight in the final product.<br><br>Limits of free formaldehyde, as measured in the final product, shall not exceed the |

| | | |
|---|---|---|
| | | relevant limits defined in criterion 5.3(h). |
| In can preservative:<br><br>Isothiazoline or izothiazoline-releasing substances: | H317, H330, H400, H410 | *See horizontal derogation condition at foot of table<br><br>The total quantity of all isothiazoline substances added to the final product shall not exceed 0,040 % weight by weight in the final product.<br><br>In cases where isothiazoline preservatives are actively added by the paint or varnish manufacturer, the final product shall be tested for isothiazoline content to verify compliance with the combined limit. |
| Tinting machine preservatives:<br><br>Same derogations as listed above for in-can preservative apply, plus:<br><br>3-iodo-2-propynyl butylcarbamate (IPBC, CAS No 55406-53-6) | H317, H330, H331, H372, H400, H410 | Applicable to tinting systems.<br><br>The combined sum of in-can preservatives used in the tinting machine shall not exceed 0,20% weight by weight in the colour tints.<br><br>The concentration of IPBC shall not exceed 0,10% weight by weight.<br><br>When mixed with base paint, the overall concentrations of in-can preservatives shall be low enough to demonstrate compliance with any individual limits in the rows above in the final tinted paint product as well as the horizontal derogation condition*. |
| Dry-film preservatives: | H330, H400, H410, H411, H412 and H317<br><br>(Additionally, and only for IPBC: H331 and H372) | Only applies to outdoor products and indoor products for use in high humidity areas.<br><br>*See horizontal derogation condition at foot of table<br><br>The sum total of dry-film preservatives with any of these derogated hazards shall:<br><br>Not exceed 0,10 % weight by weight in indoor products for use in high humidity areas<br><br>Be less than 0,50% weight by weight in outdoor products. |

| | | |
|---|---|---|
| | | Higher concentrations may be permitted in the case of slow release, encapsulated forms of dry film preservatives, but only in cases where the formulation can be tested to demonstrate that the specific formulation of the final product, or read-across formulations, would not be classified with any of the hazards listed in Table X.<br><br>Any dry-film preservatives classified as H400 or H410 must be non-bioaccumulative, demonstrated by having an octanol-water coefficient (Log Kow) of ≤ 3.2 or a bioconcentration factor (BCF) of ≤ 100. |
| Preservative stabiliser:<br><br>Zinc oxide (CAS No 1314-13-2) | H400, H410 | *See horizontal derogation condition at foot of table<br><br>Permitted to be used as a preservative stabiliser, in concentrations up to 0,040 % weight by weight of the final product, when used to stabilise tinting paste or dry film preservations combinations that require 1,2-Benzisothiazol-3(2H)-one (BIT). |
| Drying and anti-skimming agents | | |
| Anti-skimming agents | H317, H412, H413 | *See horizontal derogation condition at foot of table<br><br>The sum total anti-skimming agent content shall not exceed 0,40 % weight by weight in the final product. |
| Driers (siccatives) | H301, H317, H373, H400†, H410†, H412, H413 | *See horizontal derogation condition at foot of table<br><br>The sum total drier content shall not exceed 0,10 % weight by weight in the final product.<br><br>† The derogation for H400 and H410 only applies to cobalt-based drier compounds and such compounds can only be used up to 0,050 % weight by weight in the final |

| | | |
|---|---|---|
| | | product. |
| Corrosion inhibitors | | |
| Anti-corrosion pigments | H410, H411, H412, H413. | *See horizontal derogation condition at foot of table<br><br>Only allowed in quantities up to 8,0 % weight by weight in interior/exterior trim and cladding paints for metal, one-pack performance coatings, two-pack performance coatings and anti-rust paints.<br><br>Allowed in quantities up to 2,0 % in all other product categories. |
| Verdigris prevention | H412, H413 | *See horizontal derogation condition at foot of table<br><br>Only allowed in quantities up to 0,50 % weight by weight. |
| Other, miscellaneous | | |
| Adipic acid dihydrazide (CAS No 1071-93-8) | H317, H411 | *See horizontal derogation condition at foot of table<br><br>Only allowed up to 1,0 % weight by weight and when used as an adhesion promoter or as a crosslinking agent. |
| Methanol (CAS No 67-56-1) | H301, H311, H331, H370 | *See horizontal derogation condition at foot of table<br><br>Only permitted as a residual reaction product of other substances in the product formulation. Allowable residual concentration increases as a function of binder content in the following manner:<br><br>- Binder content of 10-20%: allowable residual methanol is 0,020 % weight by weight in the final product.<br><br>- Binder content of 20-40%: allowable residual methanol is 0,030 % weight by weight in the final product. |

| | | |
|---|---|---|
| | | - Binder content of >40%: allowable residual methanol is 0,050 % weight by weight in the final product. |
| Mineral raw materials, including fillers | H373 | *See horizontal derogation condition at foot of table<br><br>Only applies to mineral raw materials and leucophyllite minerals that naturally contain crystalline silica. |
| Neutralising agents | H311, H331, H400, H410, H411, H412, H413 | *See horizontal derogation condition at foot of table<br><br>Only allowed up to 1,0 % weight by weight in varnishes and floor paints, and up to 0,50 % in all other products. |
| Optical brighteners | H413 | *See horizontal derogation condition at foot of table<br><br>Only allowed up to 0,10 % weight by weight of the final product. |
| Silicon resin | H412, H413 | *See horizontal derogation condition at foot of table<br><br>Only allowed up to concentrations of 2,0 % weight by weight in the final product. |
| Solvents | H304 | *See horizontal derogation condition at foot of table<br><br>Only allowed up to concentrations of 1,0 % weight by weight in the final product. |
| Surfactants | H411, H412, H413 | *See horizontal derogation condition at foot of table<br><br>Only allowed up to 1,0 % weight by weight in transparent, semi-transparent, white or light-coloured products or up to 3,0 % weight by weight in all other colours of products. |
| Titanium dioxide (in a powder form containing 1% or more | H351 (inhalation) | *See horizontal derogation condition at foot of table |

| | | |
|---|---|---|
| of particles with aerodynamic diameter ≤ 10µm) | | The applicant shall demonstrate that they have systems in place to minimise worker exposure to dry TiO2 powder in the workplace (e.g. closed dosing systems, ventilated dosing and mixing areas and personal protective equipment). |
| Trimethylolpropane | H361fd | *See horizontal derogation condition at foot of table<br><br>Only when used as an additive in supplied pigments and only up to a maximum concentration of 0,50 % weight by weight of the supplied pigment. |
| Unreacted monomers (in binders) | H400 +??? | *See horizontal derogation condition at foot of table<br><br>Only allowed up to sum total concentrations of 0,050 % weight by weight in the final product. |
| UV stabilisers | H317, H411, H412, H413 | *See horizontal derogation condition at foot of table<br><br>Only applicable to outdoor products and only up to a maximum concentration of 0,60 % weight by weight to the final product formulation. |
| *Horizontal derogation condition: none of the derogations above, either individually or in combination, shall be permitted if they result in the final product being classified with any of the hazards defined in Table X, with the notable exception of H412 and H413 for outdoor products due to the presence of dry film preservatives. | | |

The hazard statement codes generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

The use of substances or mixtures that are chemically modified during the production process, so that any relevant hazard for which the substance or mixture has been classified under Regulation (EC) No 1272/2008 no longer applies, shall be exempted from the above requirement.

This criterion shall not apply to:

— substances not included in the scope of Regulation (EC) No 1907/2006 as defined in Article 2(2) of that Regulation;

— substances covered by Article 2(7)(b) of Regulation (EC) No 1907/2006, which sets out the criteria for exempting substances included in Annex V to that Regulation from the registration, downstream user and evaluation requirements.

**Assessment and verification:**

The applicant shall provide a signed declaration of compliance with sub-criterion 4.2, a list of all chemicals used, their concentrations in the format supplied, safety data sheets for the chemicals supplied, the quantities added to the final product formulation and any other relevant declarations from suppliers or chemical producers that are necessary in order to demonstrate compliance with the relevant requirements.

Substances known to be released or to degrade from ingoing substances are considered ingoing substances and not impurities.

Any ingoing substances shall be assumed by default to be 100% retained in the final product. Justifications for any deviation from a retention factor of 100% (e.g. solvent evaporation) or for chemical modification of a restricted impurity shall be provided.

For substances exempted from sub-criterion 5.2 (see Annexes IV and V to Regulation (EC) No 1907/2006), a declaration to this effect by the applicant shall suffice to demonstrate compliance.

Since multiple products or potential products using the same process chemicals may be covered by one EU Ecolabel license, the calculation only needs to be presented for each impurity for the worst-case product within a common family of products covered by the same license.

Regarding information requested from suppliers that may be commercially sensitive, evidence from suppliers can also be provided directly to competent bodies without necessarily providing certain details to the applicant.

**4(c) Specific hazardous substance restrictions for ingoing substances.**

The substances indicated below shall not be included as ingoing substances in the product formulation or as ingoing substances to the ingredients used to make the final product:

(a) Akylphenolethoxylates (APEOs) and their derivatives.

(b) Perfluorinated and polyfluorinated compounds (PFAS).

(c) Phthalates.

(d) Organotin compounds.

(e) Fragrances.

(f) Bisphenols that have been identified by ECHA for further EU regulatory risk management that are known or potential endocrine disruptors for the environment or for human health, or that can be identified as toxic for reproduction.

(g) The following metals shall not be present in the final product formulation in quantities exceeding 0,010 % weight by weight (per metal): Cadmium, Lead, Chromium (VI), Mercury, Arsenic, Barium, Selenium, Antimony and Cobalt. The only exceptions shall be when the limits are exceeded due to the use of:

- Cobalt compounds used in driers that comply with the derogation conditions in criterion 5.2,

- the Barium-containing mineral nepheline syenite, and
- the use of the following pigments: Barium sulphate; Antimony Nickel within an insoluble TiO2 lattice; Cobalt aluminate blue spinel and Cobalt chromite blue-green spinel.

(h) Free formaldehyde shall not be intentionally added to the final product. The final product shall be tested in order to determine its free formaldehyde content. Worst-case samples for testing shall selected for the white base or transparent tinting base and colour tint predicted to have the highest theoretical amount of formaldehyde content. The following sum total limits of free formaldehyde shall be permitted:

- Up to 0,0010 % weight by weight permitted when bronopol or preservatives that are formaldehyde donors are required as an in-can preservative to protect a specific type of paint or varnish and where the formaldehyde donor is used in the place of isothiazolinone preservatives.
- Up to 0,010 % weight by weight permitted when polymer dispersions (binders) provide, through residual levels of formaldehyde, the function of formaldehyde donors instead of in-can preservatives.

**Assessment and verification:**

(a to f) The applicant shall declare the non-use of APEOs, PFAS, phthalates, organotin compounds, relevant bisphenols and fragrances as ingoing substances in their formulation, supported by declarations from their suppliers about the non-use of APEOs/PFAS and listed phthalates as ingoing substances in the ingredients supplied and that are used in formulations subject to the EU Ecolabel license application procedure.

(g) In the case of the metal restrictions, the product formulation(s) should be tested for metal content via a standard laboratory procedure for digesting powder, liquid or paste samples prior to analysis for metal content via methods such as atomic absorption spectroscopy or inductively coupled plasma spectroscopy.

For demonstrating compliance with exemptions from certain metal content restrictions, the applicant shall declare the content of any metal containing ingredients added to the formulation, supported by a declaration from their supplier(s). In the case of demonstrating that a restricted metal is bonded within a crystal lattice in an insoluble form, compliant results from testing according to DIN 53770-1 or an equivalent standard shall be accepted.

(h) The applicant shall declare which of their products should have the highest theoretical free formaldehyde content. This declaration shall be based on the choice of the paint formulator to use formaldehyde donors as in-can preservatives and declarations from suppliers regarding the amounts of formaldehyde donors used to preserve supplied ingredients (especially bonders). The addition of these substances (and any other ingredients that release formaldehyde) to the worst-case formulations shall not result in the content of free formaldehyde in the final product exceeding 0,010%, as measured by the Merckoquant method, the VdL RL 03 method or HPLC analysis in accordance with UNI 11775 or an equivalent standard.

**Criterion 5: Volatile Organic Compounds (VOCs) emissions**

*Note: only applicable to indoor professional coatings*

Emissions of VOCs and SVOCs shall not exceed the limits defined in the table below.

Table X: VOC emission limits

| **Parameter** | **3-day test results** | **28-day test results** |
|---|---|---|
| TVOC* | < 3000 µg/m$^3$ | < 300 µg/m$^3$ |
| TSVOC* | | < 100 µg/m$^3$ |
| R value** | | ≤ 1.0 |
| Formaldehyde | | < 20 µg/m$^3$ |
| Sum of any other Carcinogenic 1A or 1B VOCs apart from formaldehyde | < 10 µg/m$^3$ | < 1 µg/m$^3$ |

** TVOC and TSVOC are as defined in EN 16402 and including quantification of any non-target compounds*

*** R value, as defined in EN 16402*

**Assessment and verification:**

The applicant shall submit a copy of an EN 16402 test report for each of the products being covered by the EU Ecolabel license application. In cases of products with identical formulations but different packaging volumes or types, one test report shall suffice. In cases of products based on the same formulation but with multiple different shades, a test report for the worst-case formulation shall suffice, so long as it is clearly explained why that particular product formulation represents the worst-case.

For the calculation of the R value, reference should be made to the latest set of agreed EU LCI values available at the time of testing. These values can be consulted here on the European Commission website: https://single-market-economy.ec.europa.eu/sectors/construction/eu-lci-subgroup/eu-lci-values_en

**Criterion 6: Consumer information**

**6(a) The following texts shall appear on or be attached to the packaging:**

— 'Minimise paint wastage by estimating how much paint you will need before buying'

— 'Recover unused paint for re-use'.

— 'Reuse of paint can effectively minimise the products' life cycle environmental impact'

**6(b) The following general information and advice shall be provided on or be attached to the packaging or be available via a web-link or QR code:**

— How to estimate the amount of paint needed prior to purchase in order to minimise paint wastage and a recommended amount as a guideline (e.g. for 1 $m^2$ of wall, X litres of paint is needed).

— How to deal with the 'leftover paint'.

**6(c) The following advice and recommendations on how to handle the paint shall be provided on or be attached to the packaging or be available via a web-link or QR code:**

— Safety measures for the user. This shall include basic recommendation on personal protective equipment that should be worn. It shall also include additional measures that should be taken when using spray equipment.

— The use of cleaning equipment and appropriate waste management (in order to limit water and soil pollution). For example, text advising that unused paint requires specialist handling for safe environmental disposal and therefore it should not be thrown away with household or commercial waste (e.g. 'Do not put residual paint down the kitchen sink or toilet, or into a waste bin').

— Storage of the paint in appropriate conditions (before and after opening), including, where appropriate, safety advice.

**Assessment and verification:** the applicant shall declare that the product complies with the requirement and provide the competent body with the artwork or samples of the user information and/or a link or QR code to a manufacturer's website containing this information as part of the application. The recommended amount of paint given as a guideline shall be provided.

**Criterion 7: Information appearing on the EU Ecolabel**

The optional label with text box shall contain, where relevant, the following texts:

— Minimised content of hazardous substances

— Reduced content of volatile organic compounds (VOCs): x g/l

— Reduced emissions of volatile organic compounds to indoor air (where indoor criteria have been met) or

— Good performance for indoor use (where indoor criteria have been met) or

— Good performance for outdoor use (where outdoor criteria have been met) or

— Good performance for both indoor and outdoor use (where both indoor and outdoor criteria have been met)

The guidelines for the use of the optional label with text box can be found in the 'Guidelines for use of the Ecolabel logo' on the website:

http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf

**Assessment and verification:** the applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a declaration of compliance with this criterion.