

MPMA Green Label Seminar 2016

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Distinguishing Environmentally-Preferred Paints in the Market

Prepared by:
S.S.Chen/Tan Yong Nee



Content

- Green products a.k.a Environmentally-preferred products
- Eco-labelling to distinguish products with improved environmental performance
- Global movement in eco-labelling
- Criteria that establish environmentally-preferred paints
- The SIRIM Eco-labelling Scheme

Green products can be defined as those that:

- Use resources more efficiently
- Cause less environmental damage along their life cycle

Extracted from European Commission COM(2013) 196 final “Building a Single Market for Green Products

Green Performance Emphasis

- ✱ Energy efficient
- ✱ Reduce greenhouse gases emission
- ✱ Reduce resource consumption
- ✱ Reduce hazardous and toxic substances
- ✱ Reduce ozone depleting substances
- ✱ Reduce emissions to air and water
- ✱ Increase recycled content

- A green product is green because of its better environmental performance.
- A product with good environmental performance is green even if it does not carry an environmental label!

Extracted from European Commission COM(2013) 196 final “Building a Single Market for Green Products

Comparison of products should be done only among similar products of the same category i.e. products that can perform equivalent function e.g. paint and coatings

Environmental label/ environmental declaration is defined as claim which indicates the environmental aspects of a product or service

WHY do we have environmental labels and declarations?

The overall goal is to communicate verifiable and accurate information, that is not misleading, on environmental aspects of products and services, to encourage the demand for and supply of those products and services that cause less stress on the environment...

Communicating Environmental Performance through:

Type I (ISO14024)	Type II (ISO14021)	Type III (ISO14025)	CFP/ WFP ISO 14067/14046
Certification with criteria	Self declaration	Disclosure of quantitative information	Quantitative GHG & water impact assessment
Comply or did not comply?   SIRIM ECO LABEL	What environmental aspect is addressed by the product? 	What is the quantified environmental burden?  Verification by 3 rd party	What is the quantified GHG burden/ water impact?  Optional verification  SIRIM CO ₂ e: xx



Eco Mark
(Japan)



Blue angel
(Germany)



Canon
(Japan)



Hitachi
(Japan)



SWE-EPD
(Sweden)



Eco-Leaf
(Japan)



CFP Label
(Thailand)



Climatop
(Swiss)

Principles Applicable to Environmental Labels & Declarations

- ✱ be accurate, verifiable, relevant and not misleading.
- ✱ not create unnecessary obstacles to trade.
- ✱ be based on scientific methodology
- ✱ Information on procedure, methodology to support the label be available upon request
- ✱ consider all relevant aspects of the life cycle of the product
- ✱ not inhibit innovation
- ✱ information demand shall be limited to only those that are necessary to establish conformance to claims
- ✱ Information on the environmental aspects be made available to purchasers

Global Ecolabelling Network (GEN)



GEN is a non-profit association that was founded in 1994 to help protect the environment by improving, promoting, and developing the ecolabelling of green products and sustainable services.

GEN members have attained the status of "Type 1" specified in the ISO 14024 standard. This means:

- their ecolabelling programmes are voluntary
- their standards address multiple environmental criteria over the life cycle of a product or services
- standards are published and transparent
- ecolabels are awarded using independent third-party verification

Examples of Ecolabelled/ Green Paints

Paints/Coatings

Good Environmental Choice Australia
China Environmental United Certification Center
Environment and Development Foundation
Green Council
The Standards Institution of Israel
Japan Environment Association (JEA)
Korea Eco-Products Institute
SIRIM QAS International Sdn Bhd
The New Zealand Ecolabelling Trust
Nordic Ecolabelling Board
UL Environment
Green Seal Inc.
Philippine Center for Environmental Protection and
Sustainable Development (PCEPSD)
Singapore Environment Council
Thailand Environment Institute
All Ukrainian NGO Living Planet

17 standards related to
paint and coatings under
Type 1 GEN

Examples of Eco-labelled Paints under GEN

	China Environmental United Certification Center	China Environmental Labelling Type 1	Water Based Coatings
	Environmental Protection Administration, Taiwan	Green Mark	Water Based Coatings
	KEITI	Eco-label	Paints

Examples of Eco-labelled Paints under GEN

	SIRIM QAS International	SIRIM Eco-label	Paints
	The New Zealand Ecolabelling Trust	Environmental Choice	Paints
	Good Environmental Choice Australia	Australian Ecolabelling	Paints and Coatings

Examples of Eco-labelled Paints under GEN

	Non-profit organisation registered in the USA	Green Seal Label	Paints, Coatings, Stains and Sealers
	Singapore Green Labelling Scheme	Green Label	Paints and Surface Coatings
	Thailand Environment Institute	Thai Green Label	Paints

Examples of Eco-labelled Paints under GEN

	Different agencies in the Nordic countries	Nordic Swan Eco-label	Indoor paints and varnishes
	Philippine Center for Environmental Protection and Sustainable Development	Green Choice Seal	Water based paint Oil based paint
	All Ukranian NGO Living Planet		(In Ukranian language only)

Snapshots of Requirements

- Highly diverse in scope of requirements e.g. from Thailand to Nordic region (Scandinavian countries).
- However certain parameters exist in all the standards/ criteria documents e.g. controls on formaldehyde, VOCs and heavy metals.
- Most standards require compliance to product performance specification as a pre-requisite
- Labels present claims in different format

Characteristics of 'Green Paints'



Green Label Product: Paints

Green Label criteria for paint products will focus on removal of heavy metal, VOCs and formaldehyde from paint to minimize the product's environmental impact and ensure consumer safety.



Paints' refers only to:

- Water-based paints and varnishes such as
 - Ø Emulsion paints that can dry when the water evaporates at room temperature used for coating (paint, spray, etc.)
 - Ø Paints in other groups, such as
 - ü Water-soluble paints
 - ü Water-dispersing paints
 - ü Water-slurry paints
- Solvent-based paints and varnishes

All kinds of specific application paints that are listed in Thai Industry Standards can apply for the Green label

Characteristics of 'Green Paints'



Green Label Product: Paints



- Product is already certified to Thai industrial standard mark or present test results according to specified requirements in the industrial standard related to paint product, or present test results according to acceptable international standard(s) or acceptable national standard(s).
- Provide very specific and detail descriptions on the testing of VOCs in the product and emission from the product at the point of use including test methods.
- Limit heavy metals (lead, mercury, and cadmium) due to impurities or traces deriving from raw materials and prohibit arsenic and antimony as paint ingredients.

Characteristics of 'Green Paints'



Green Label Product: Paints



- Prohibit use of aromatic hydrocarbons as solvents, but allow contaminations to different concentrations dependent on type of paint.
- Prohibit use of halogenated solvents and formaldehyde in the production process, but allow contaminations to specific concentrations.
- Plastic packaging must be symbolized by type of plastic used according to Thai Industrial Standard: Symbols for Recycling Plastics (TIS 1310) or identified the type of plastic used by abbreviated terms under ISO 1043 or ISO 11469.
- Packaging made from PVC plastic shall display a logo with the following phrases on the product: “ห้ามเผา” or “Do not burn”.

Characteristics of 'Green Paints'

 Green Mark	Water-based Paints	General No. : 11
		Classified No. : H-03

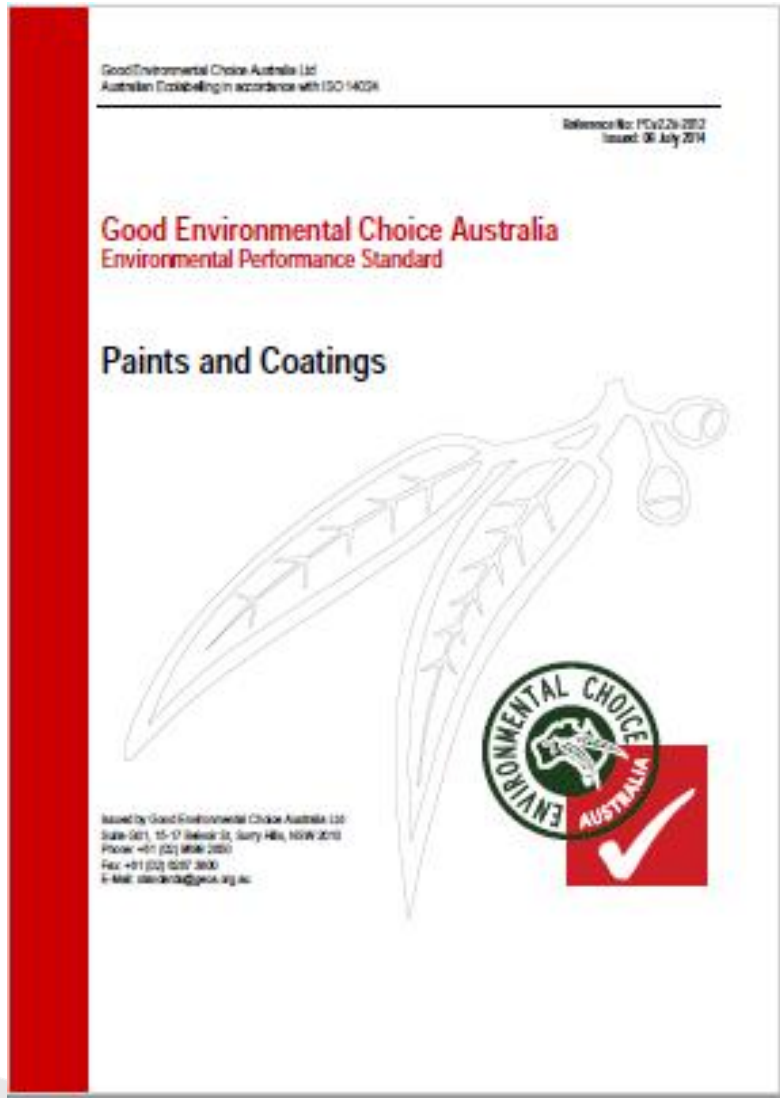
- Meet all regulatory requirements for controlled substances such as heavy metals, plasticisers, formaldehyde and VOCs.
- Shall not contain substances or mixtures meeting the following hazard classifications of the EU Dangerous Substances Directive (67/548/EEC): (Risk Phrases) R23, R24, R25, R26, R27, R28, R33, R39, R40, R42, R45, R46, R48, R49, R60, R61, R62, R63, R68, R50/53, R51/53, and R52/53.
- Submit Material safety data sheets (MSDSs) for review.

Characteristics of 'Green Paints'

 Green Mark	Water-based Paints	General No. : 11
		Classified No. : H-03

- The metal container and opening's sealing material shall have lead content below the regulatory limit; if the product is stored in a plastic container, the container shall meet the requirements of ISO 11469 in labelling in prominent areas to indicate the composition code.
- Applicable test methods and regulatory limits are stated clearly.
- The product or product packaging shall also bear a label reading "Low Pollution".

Characteristics of 'Green Paints'



Environmental Choice Australia

Applicable only to:

- Interior architectural paints
- Exterior architectural paints
- Other water based coatings
- Student and artists paints

Solvent-based coatings are not eligible for application

32 distinct criteria to comply to get the Australia Ecolabel

Characteristics of 'Green Paints'

Environmental Choice Australia: Paints and Coatings



No.	Criteria	Compliance
1.	Fitness for Purpose	Relevant quality and performance tests
2.	Titanium Dioxide, Zinc Oxide and Lithopone Content	Limits on permissible concentration in the finished product
3.	Glycol ethers	Banned use for both substances base on list of ingredients
4.	Ozone Depleting Substances	Banned use based on Montreal Protocol and verified through list of ingredients
5.	Ozone Depleting Substances in cleaning agents for paint production equipment	
6.	Reflective Coatings	Solar reflectance claims and testing

Characteristics of 'Green Paints'



Environmental Choice Australia: Paints and Coatings



No.	Criteria	Compliance
7.	Volatile Organic Compounds (VOCs)	Limits declared in the formulation details with physical properties and chemical formula
8.	Tints and Colourants	Limit VOCs
9.	SVOCs	Monitoring and report on content required
10.	Water Emissions	Extent of damaging water emissions wrt. Effluent destination, volume discharged and frequency
11.	Hazardous Materials – Dangerous Goods	Safety Data Sheet (SDS) on Dangerous Goods may be present
12	Hazardous Materials – R phrases restricted for product	Full ingredients list and SDS for each ingredient

Characteristics of 'Green Paints'



Environmental Choice Australia: Paints and Coatings



No.	Criteria	Compliance
13.	Hazardous Materials – R phrases restricted for ingredients	Show absence of these materials by providing full ingredients list and SDS for each ingredient
14.	Hazardous Materials – Endocrine disruptors	
15.	Hazardous Materials – Environmental hazards	
16.	Prohibited Substances – Banned substances	
17.	Prohibited Substances – Halogens, halogenated compounds and volatile aromatic hydrocarbons	

Characteristics of 'Green Paints'



Environmental Choice Australia: Paints and Coatings



No.	Criteria	Compliance
18.	Heavy metals restriction	Provide full ingredients list and SDS for each ingredient
19.	Biocides substances	
20.	Production safety – staff exposure	Permit site inspection and provide copies of safety manuals, protection equipment reports and/or training records.
21.	Product information – available to public	Provide copy of labels and care information
22.	Product information – Cleaning product recommendations	Provide information that are made available to public SDS for each product

Characteristics of 'Green Paints'



Environmental Choice Australia: Paints and Coatings



No.	Criteria	Compliance
23.	Packaging - Halogenation	Not permitted and proven through information regarding the composition
24.	Plastic packaging (over 10 g weight)	Packaging must be marked with a plastics identification code
25.	Waste minimisation	Waste minimization policies and procedures as in documentation of materials flows, and reports on energy use and sourcing
26.	Chemical storage	Permit site inspection, and copies of handling requirements and procedures for control of spills
27.	Environmental claims	Provide relevant advertising material and supporting documents on public claims

Characteristics of 'Green Paints'



Environmental Choice Australia: Paints and Coatings



No.	Criteria	Compliance
28.	Environmental legislation and government orders	Statement of conformance and applicable permits, and corrective actions if applicable
29.	Fair pay	Statement of conformance and sample workplace agreement
30.	Workplace safety	Statement of compliance with legislation, OSH procedures and policies and corrective actions
31.	Equal opportunity	Statement of compliance with five specific legislation, and not found in the non-compliance listing
32.	Lawful conduct	Statement to confirm no breaches to the Trade Practices Act or Corporations Act.

Characteristics of 'Green Paints'



Nordic Swan Ecolabel

Nordic Ecolabelling of
Indoor paints and varnishes



Version 3.1 • 05 November 2015 - 31 December 2019

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

Nordic 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

Characteristics of 'Green Paints'



Nordic Swan Ecolabel for Indoor Paints and Varnishes (very specific on non-eligible type of products)

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

Requirements of the Nordic Ecolabelling for Indoor Paints and Varnishes

- General environmental requirements – applies to all ingoing substances to the paint:
 - ü If the product contains >3% by weight of TiO_2 , a description from the titanium dioxide producer and evidence to show compliance to SO_x or chloride waste emission is required. Only certain types of nanoparticles are allowed e.g. pigments but nano- TiO_2 which is not considered a pigment is not permitted
 - ü A long list of substances that must be excluded
 - ü Controlled content of VOC,SVOC and VAH

Nordic Ecolabelling of
Indoor paints and varnishes



Version 3.1 • 05 November 2015 - 31 December 2019

Nordic Ecolabelling



Characteristics of 'Green Paints'



SIRIM ECO-LABELLING SCHEME

REFERENCE NO: 019

ISSUE DATE: AUGUST 2009

CRITERIA DOCUMENT FOR PAINTS

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SIRIM Eco-label Paints

Applicable only to all paints which have water as the primary solvent/diluent and all paints which have an organic solvent as the primary volatile component.

Specify six criteria for certification:

- VOCs
- Heavy metals
- Aromatic hydrocarbons
- Halogenated hydrocarbons
- Formaldehyde
- Packaging material



ECO-LABELLING CRITERIA FOR PAINTS

1. SCOPE

This document and all product environmental criteria there in apply to all paints which have water as the primary solvent/diluent and all paints which have an organic solvent as the primary volatile component.

2. DEFINITION

The following definition shall apply within the scope of the product group:

1. Volatile Organic Compound

Any hydrocarbon with, at standard conditions for pressure, a boiling point lower or equal to 250°C, using ISO 11890-1 or 11890-2 test methods.

3. CRITERIA FOR CERTIFICATION

3.1 Volatile Organic Compounds Content (VOC)

Maximum VOC depends on the product:

Product	VOC
Emulsion paints	shall not exceed 50 g/l
Other water-based varnishes	shall not exceed 100 g/l
Solvent-based paints and varnishes	shall not exceed 300 g/l

Compliance Verification:

- The applicant shall declare compliance with the requirement and present the test report according to the test method under ISO 11890-1, ISO 11890-2, ISO 17895, ASTM D 3690 or the national standard if available OR
- The applicant shall submit a test report, according to the test method under ISO 11890-1, ISO 11890-2, ISO 17895, ASTM D 3690 or the national standard if available, done by either third party or manufacturer itself who receives ISO 17025 certification or national accreditation system. Sampling shall be performed in accordance to the options listed in Appendix A.

Note:

- ISO 11890-1: Paints and varnishes – Determination of VOC content – Part I: Difference method
- ISO 11890-2: Paints and varnishes – Determination of VOC content – Part II: Gas-chromatographic method
- ISO 17895: Paints and varnishes – Determination of VOC content – content of low VOC emulsion paints (in-can VOC)
- ASTM D 3690: Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.



3.2 Heavy Metals

Ingredients (substances or preparations) used in the formula shall not contain the following heavy metals:

- mercury,
- lead,
- cadmium,
- hexavalent chromium,
- arsenic,
- antimony

Triphenyl tins (TPT) and Tributyl tins (TBT) shall not be used.

Ingredients may however contain impurities or traces deriving from raw materials. The sum of mercury, lead, cadmium and hexavalent chromium shall not exceed 0.1% (1,000 ppm) by weight.

Compliance Verification:

- The applicant shall submit a test report, according to the test method under ISO 3856-1 or ASTM D 3335 for lead, ISO 3856-4 or ASTM D 3335 for cadmium, ISO 3856-5 for hexavalent chromium, and ISO 3856-7 or ASTM-D 3624 for mercury or the national standards if available. Sampling shall be performed in accordance to the options listed in Appendix A.
- To verify the absence of arsenic, antimony, TBT, and TPT, the applicant shall declare compliance with the requirement and present the test report according to the test method under ISO or the national standard if available.

Note:

- ISO 3856-1: Determination of lead content – Flame atomic absorption spectrometric method and dilution spectrophotometric method
- ISO 3856-4: Determination of cadmium content – Flame atomic absorption spectrometric method and polarographic method
- ISO 3856-5: Determination of hexavalent chromium content of the pigment portion of the liquid paint and of the paint in powder form – Diphenylcarbazide spectrophotometric method
- ISO 3856-7: Determination of mercury content of the pigment portion of the paint and of the liquid portion of water-dilutable paints – Flameless atomic absorption spectrometric method.



Your Partner to Global Trade

3.3 Aromatic Hydrocarbons

Aromatic hydrocarbons shall not be used as solvent.

Product	Contamination by weight
Emulsion paints	shall not exceed 0.1%
Other water-based varnishes	shall not exceed 1%
Solvent-based paints and varnishes	shall not exceed 5%

Compliance Verification:

The applicant shall submit a test report, according to the test method under ASTM D 3257 or the national standard if available. Sampling shall be performed in accordance to the options listed in Appendix A.

Note:

ASTM D 3257: Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography

3.4 Halogenated Hydrocarbons

Halogenated hydrocarbons shall not be used.

Compliance Verification:

The applicant shall declare compliance with the requirement and present a self-declaration by the manufacturer.

3.5 Formaldehyde

Formaldehyde shall not be used and if used the content shall not exceed 10 mg/kg.

Compliance Verification:

The applicant shall declare compliance with the requirement and present a self-declaration by the manufacturer.

3.6 Packaging Material

Lead shall not be contained in metal containers.

Compliance Verification:

The applicant shall declare compliance with the requirement and present a self-declaration by the manufacturer.



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4. LABELLING REQUIREMENTS

- 4.1 The paint that meets all the requirements of this document can claim the use of the SIRIM Eco-Label Mark with the accompanying text: "Low VOC & Heavy Metals-Free".
- 4.2 "Heavy Metals-Free" implies the limits established in item 3.2 of this document have been fulfilled.
- 4.3 The SIRIM Eco-Label may appear on wholesale or retail packaging or on the product itself.

5. REFERENCE

1. The Australian Ecolabel: <http://www.aela.org.au/StandardsRegister.htm>
2. Ecomark Scheme (India): <http://envfor.nic.in/cpcb>
3. Eco Mark (Japan): <http://www.jeas.or.jp/ecomark/english/nintei.html>
4. Environmental Choice New Zealand: http://www.envirochoice.org.nz/published_criteria.html
5. Environmental Choice Program (Canada): <http://www.environmentalchoice.com/guidelines/guide.cfm?content=Guidelines>
6. Environmental Labelling Program (Korea): <http://www.kela.or.kr/english/>
7. Green Label Programme (Thailand): http://www.tei.or.th/Program_Projects/bep/GL_Home_Related/GL_home.htm
8. Green Mark Program R.O.C. (Taiwan)
9. Milieukeur (the Netherlands): <http://www.milieukeur.nl/english/>
10. EU Eco-Label Scheme (including Denmark and UK):
11. <http://europa.eu.int/comm/environment/ecolabel/producers/productgroups.htm>
12. ICI paints: <http://www.icipaints.com/ie/indexflash.htm>
13. Benjamin Moore Company: <http://www.benjaminmoore.com>
14. Environmental Issues: <http://environment.about.com/>
15. ASTM standards worldwide: <http://www.astm.org/>



SIRIM Eco-labelling Scheme



- TYPE I – Third Party Certification
- CERTIFICATION SYSTEM ISO/IEC GUIDE 65
- TYPE 5 – Includes assessment of quality system, quality control plan, sampling & testing, product re-evaluation, issuance of license and market surveillance

OBJECTIVE

- i. To enable the industries to make credible claims on the environmental attributes of their products.
- ii. To provide independent verification on the accuracy of 'Environmental Claims on products'.
- iii. To educate and create awareness among the consumers, businesses and manufacturers on environmentally-friendly products and services.



SIRIM Eco-labelling Product Criteria Documents



51 PCDs in the following categories:

- ✱ Cleaning
- ✱ Construction/Building
- ✱ Home Appliance
- ✱ Home Care Products
- ✱ Lights
- ✱ Office Supplies
- ✱ Package Container
- ✱ Paper Products/Inks
- ✱ Personal Care Products
- ✱ Adhesives
- ✱ Water Efficient Products
- ✱ Recycled Products
- ✱ Others

Criteria were developed to cater to the local industry's ability to comply..but upgrading is needed to meet the global green market!



SIRIM ECO-LABELLING SCHEME

REFERENCE NO: 019
ISSUE DATE: AUGUST 2009

CRITERIA DOCUMENT FOR
PAINTS

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SIRIM Eco-labelled Products



90 licenses covering 21 product categories.

- a) Biodegradable cleaning agents
- b) Fabric care products
- c) Paints
- d) Cement
- e) Fibre cement
- f) Ceramic tiles
- g) Clay roofing tiles
- h) Flat steel products
- i) Masonry units
- j) Plastic packaging
- k) Biofibre construction material
- l) Recycled plastic products
- m) Recycled rubber products
- n) Recycle paper products

27 licenses
are for paints

Thank you for
the kind attention

Requirements of the Nordic Ecolabelling for Indoor Paints and Varnishes

Nordic Ecolabelling of Indoor paints and varnishes



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Nordic Ecolabelling



- General environmental requirements:
 - ü Final product cannot be classified under certain hazard class and category
 - ü Ingoing substances cannot be classified under certain hazard class and category
 - ü Ingoing environmentally harmful substances are limited according to a specific formula
 - ü Only compliant preservatives that are not bioaccumulative can be added to a specific concentration
 - ü No active addition of formaldehyde and controlled level of free formaldehyde in the final product
 - ü Controlled residual monomers in the polymer
 - ü 8 heavy metals must not be present in the product/ raw materials
 - ü Powdered raw materials must be added in ways that promotes 'low-dust' work environment