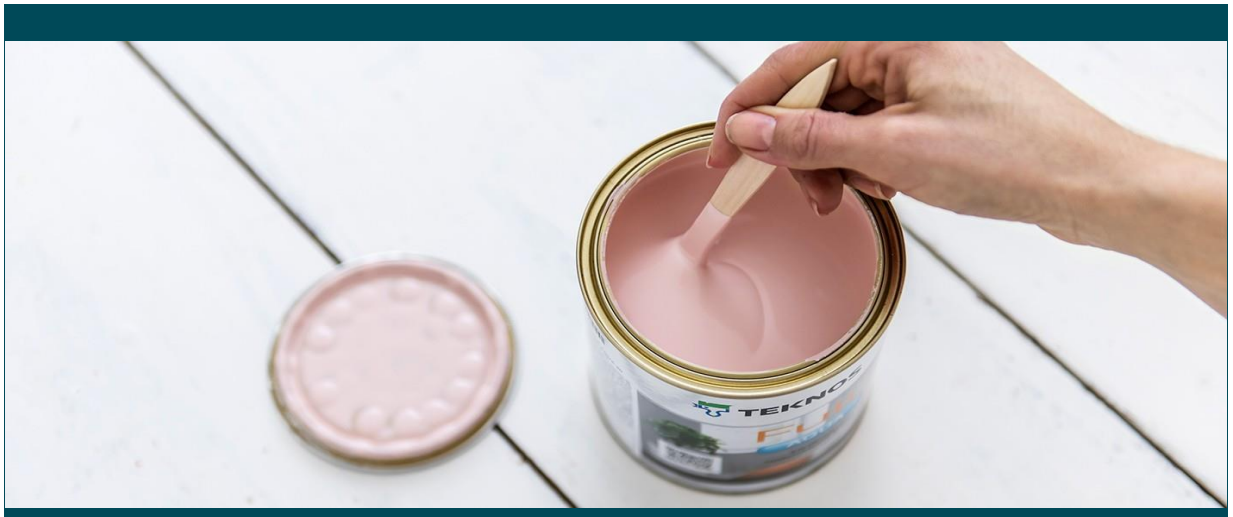
TEKNOS



Rakennustietosäätiö RTS
Building Information Foundation RTS

RTS EPD, Water-borne varnishes and furniture paints and coatings

RAKENNUSTIETO

Scope of the declaration

This environmental product declaration covers the environmental impacts of Teknos water-borne varnishes and furniture paints and coatings. The declaration has been prepared in accordance with EN 15804:2012+A1: 2013 and ISO 14025 standards and the additional requirements stated in the RTS PCR (English version, 2.6.2016). This declaration covers the life cycle stages from cradle-to-gate.

10.03.2016
Building Information Foundation
RTS
Malminkatu 16 A
00100 Helsinki
http://epd.rts.fi

Committee secretary

RTS managing director

3rd PARTY VERIFIED · RTS BUILDING INFORMATION FOUNDATION · epd

General information, declaration scope and verification (7.1)

1. Owner of the declaration, manufacturer

Teknos Oy
Takkatie 3, PL 107, 00371 Helsinki, Finland
Tero Rönkä
+358 9 506 091
tero.ronka@teknos.fi

2. Product name and number

Water-borne varnishes and furniture paints and coating

3. Place of production

Rajamäki, Finland

4. Additional information

http://www.teknos.com/

5. Product Category Rules and the scope of the declaration

This EPD has been prepared in accordance with EN 15804:2012+A1:2013 and ISO 14025 standards together with the RTS PCR (English version, 2.6.2016). Product specific category rules have not been applied in this EPD. EPD of construction materials may not be comparable if they do not comply with EN 15804 and seen in a building context. This EPD represents environmental impacts of water-borne varnishes and furniture paints and coatings produced in Rajamäki plant, Finland.

6. Author of the life-cycle assessment and declaration

Bionova Engineering, MSc Anni Oviir. Hämeentie 31, 00500
Rakennustietosäätio RTS Building Information Foundation

7. Verification

This EPD has been verified according to the requirements of ISO 14025:2010, EN 15804: 2012+A1:2013 and RTS PCR by a third party. The verification has been carried out by Bionova Ltd, Rodrigo Castro, according to the above-mentioned PCR. Hämeentie 31, 00500 Helsinki, Finland +358 404826648 www.bionova.fi

8. Declaration issue date and validity

09.04.2018 - 09.04.2023

European standard EN 15804: 2014 A1 serves as the core PCR
Independent verification of the declaration and data, according to ISO14025:2010
☐ Internal ☑External
Third party verifier: Rodrigo Castro (PhD), Bionova Ltd

Product information

9. Product description

This EPD covers a range of high-quality water-borne Teknos furniture paints for interior and exterior use and multi-purpose Teknos varnishes and waxes for decorating and protecting wooden surfaces indoors. The products are designed to meet variable requirements of professional painters and DIYs concerning durability, washability and environmental sustainability. The main market area of the product is Europe. This EPD is representing environmental impacts of an average Teknos water-borne varnish and furniture paint and coating based on production data. The EPD is representing environmental impacts of the products:

FUTURA AQUA 3

Full-matt priming paint for interior and exterior use. For wooden and galvanized surfaces indoors as well as for wooden surfaces outdoors. Suitable as an adhesion primer for wooden and building board surfaces as well as for non-rusting metal surfaces: doors, window casements, cabinets, mouldings, panels, panel ceilings, air ducts, radiators and piping systems. Outdoors FUTURA AQUA 3 is suitable for priming wooden window casements, doors, balcony rails, garden furniture etc. Indoors FUTURA AQUA 3 is also suitable for priming plaster and filler surfaces when the substrate must be especially durable and smooth: window sills and casings, and wall surfaces in special objects, e.g. staircases.

FUTURA AQUA 20

Semi-matt furniture paint for interior and exterior use. Top coat for detached and fixed furniture indoors and outdoors. Indoors FUTURA AQUA 20 is suitable for primed and previously with alkyd paint painted wood, metal and building board surfaces: doors, window casements, cabinets, mouldings, panels, panel ceilings, air ducts, staircase railings, radiators and piping systems. Outdoors FUTURA AQUA 20 is suitable for painting primed window casements, doors, garden furniture etc. Indoors FUTURA AQUA 20 is also suitable for plaster and filler surfaces primed with FUTURA AQUA 3 Primer, for example window sills and casings, and wall surfaces in special objects, e.g. staircases.

FUTURA AQUA 40

Semi-gloss furniture paint for interior and exterior use. Top coat for detached and fixed furniture indoors and outdoors. Indoors FUTURA AQUA 40 is suitable for primed and previously with alkyd paint painted wood, metal and building board surfaces: doors, window casements, cabinets, mouldings, panels, panel ceilings, air ducts, staircase railings, radiators and piping systems. Outdoors FUTURA AQUA 40 is suitable for painting primed window casements, doors, garden furniture etc. Indoors FUTURA AQUA 40 is also suitable for plaster and filler surfaces primed with FUTURA AQUA 3 Primer, for example window sills and casings, and wall surfaces in special objects, e.g. staircases.

FUTURA AQUA 80

Gloss furniture paint for interior and exterior use. Top coat for detached and fixed furniture indoors and outdoors. Indoors FUTURA AQUA 80 is suitable for primed and previously with alkyd paint painted wood, metal and building board surfaces: doors, window casements, cabinets, mouldings, panels, panel ceilings, air ducts, staircase railings, radiators and piping systems. Outdoors FUTURA AQUA 80 is suitable for painting primed window casements, doors, garden furniture etc. Indoors FUTURA AQUA 80 is also suitable for plaster and filler surfaces primed with FUTURA AQUA 3 Primer, for example window sills and casings, and wall surfaces in special objects, e.g. staircases.

HELO AQUA 20

Semi-matt varnish for interior and exterior use. Wooden plank floors and parquet floors as well as stairs indoors, wooden furniture indoors and outdoors.

HELO AQUA 40

Semi-gloss varnish for interior and exterior use. Wooden plank floors and parquet floors as well as stairs indoors, wooden furniture indoors and outdoors.

HELO AQUA 80

Gloss varnish for interior and exterior use. Plank floors and parquet floors as well as stairs indoors, wooden furniture indoors and outdoors.

HIRSIVAHA

Wax for wooden walls and ceilings for interior use. Log and panel walls, panel ceilings, mouldings and interior doors. Suitable for untreated and previously with wood wax treated wooden surfaces.

NATURA 15

Semi-matt varnish for walls and ceilings for interior use. Woodwork, such as walls, ceilings, paneling and log walls.

NATURA 40

Semi-gloss varnish for walls and ceilings for interior use. Woodwork, such as walls, ceilings, paneling and indoor log walls.

PANEELILAKKA
Semi-matt varnish for walls and ceilings for interior use. Woodwork, such as walls, ceilings, paneling and indoor log walls.

SATU SAUNASUOJA
Transparent protection agent for walls and ceilings for interior use. For treatment of wall and ceiling panels in the steam-rooms of saunas. The product is suitable for untreated wooden surfaces or wooden surfaces previously treated with protection for sauna. Can also be used for treating wooden ceiling and wall panels in wash rooms, after sauna lounges and habitable rooms.

SATU SAUNAVAHA
Wax for interior use. Treatment of ceiling and wall panels as well as benches in the steam-room of saunas. Suitable for untreated and previously with wood wax treated wooden surfaces. Can also be used for treating ceiling and wall panels in wash rooms, after sauna lounges and habitable rooms.

TEKNOFLOOR 2K
Gloss two-component paint for concrete floors for interior use. Other areas of use are walls in humid conditions and industrial areas indoors. The paint can also be applied onto cement plaster, brick and hard construction board surfaces indoors.

TEKNOFLOOR AQUA
Semi-gloss paint for floors for interior use. Suitable for unpainted and previously with alkyd, urethane alkyd or acrylate paints painted surfaces of concrete and wood: for floors, stairs etc.

TEKNOFLOOR AQUA PRO
Semi-gloss paint for floors for interior use. Suitable for unpainted and previously with alkyd, urethane alkyd or acrylate paints painted surfaces of concrete: for floors, stairs etc.

10. Technical specifications

The product consists of the following materials: binders, water, pigments, fillers, solvents, wax, matting agents, dispersing additives, fungicides, defoamers and thickeners. Average coverage is 10 m2/L. Practical spreading rate depends on surface quality and application method.
The average density of the product is 1.14 kg/l.

11. Product standards

EN 13163:2015 Thermal insulation products for buildings

12. Physical properties

Detailed physical properties for all Teknos interior paints are available at http://www.teknos.com/decorative-paints/.

13. Raw-materials of the product

Product structure / composition / raw-material	Amount %
Binders	58-60%
Water	16-18%
Pigments	8-10%
Fillers	4-6%
Solvents	2-4%
Wax	1-3%
Matting agents, dispersing additives, fungicides, defoamerss	2-3%
Thickeners	<2%

14. Substances under European Chemicals Agency's REACH, SVHC restrictions

Name	EC Number	CAS Number
Binders and thickeners include CIT/MIT (less than 10 ppm of the total raw materials)	611-341-5	55965-84-9

15. Functional / declared unit

1 liter

16. System boundary

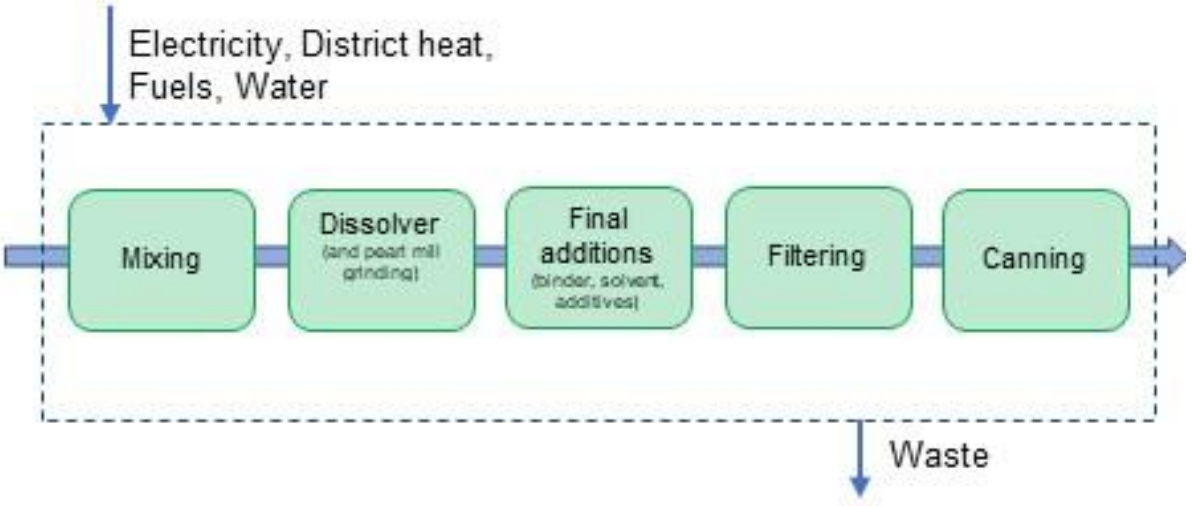
This EPD covers the following modules; A1 (Raw material supply), A2 (Transport), A3 (Manufacturing)

17. Cut-off criteria

All main flows of production materials, energy and packing have been included. The results have been provided as an aggregate of A1-A3 life cycle stages. The study excludes some minor raw materials which contribute less than 0.2 w% of the total raw materials mass. The total amount of excluded raw materials is less than 5% as per the requirements of EN 15804. The study does not exclude any hazardous materials or substances. The transportation module (A4) has been excluded since the impacts of the module are remarkably smaller (less than 20%) from the A1-A3 modules as per RTS PCR requirements.

18. Production process

The product is manufactured from raw materials, that are transported to the Teknos plant from different locations. The materials are mixed after which the substance is treated in dissolver and pearl mix grinding. The binder, solvents, additives are added and product is filtered. Final process is canning.



Scope of the Life-Cycle Assessment (7.2.1-2)

Mark all the covered modules of the EPD with X. Mandatory modules are marked with blue in the table below. This declaration covers "cradle-to-gate with options". For other fields mark MND (module not declared) or MNR (module not relevant)

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
x	x	x	MNR	MND	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	MNR	MNR	MNR
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Mandatory modules
Mandatory as per the RTS PCR section 6.2.1 rules and terms
Optional modules based on scenarios

Environmental impacts and raw-material use (7.2.3-7.2.4)

19. Environmental impacts

The results of a life cycle assessment are relative. They do not predict impact on category endpoints, exceeding of limit values, safety margins, or risks. The impacts are presented per declared unit, 1 liter of product. The impacts are mainly caused by the raw material production process (A1).

Environmental impact								
Parameter	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Global warming potential	kg CO2 -eqv	2,04E0	MND	MND	MND	MND	MND	MND
Depletion of stratospheric ozone layer	kg CFC11-eqv	3,4E-7	MND	MND	MND	MND	MND	MND
Formation of photochemical ozone	kg C2H4 -eqv	1,35E-3	MND	MND	MND	MND	MND	MND
Acidification	kg SO2 -eqv	1,98E-2	MND	MND	MND	MND	MND	MND
Eutrophication	kg PO4 3--eqv	7,01E-3	MND	MND	MND	MND	MND	MND
Abiotic depletion of non fossil resources	kg Sb-eqv	1,24E-4	MND	MND	MND	MND	MND	MND
Abiotic depletion of fossil resources	MJ	3,17E1	MND	MND	MND	MND	MND	MND

20. Use of natural resources

Resource use								
Parameter	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Renewable primary energy resources used as energy carrier	MJ	5,04E0	MND	MND	MND	MND	MND	MND
Renewable primary energy resources used as raw materials	MJ	6,12E-1	MND	MND	MND	MND	MND	MND
Total use of renewable primary energy resources	MJ	5,66E0	MND	MND	MND	MND	MND	MND
Nonrenewable primary energy resources used as energy carrier	MJ	3,42E1	MND	MND	MND	MND	MND	MND
Nonrenewable primary energy resources used as materials	MJ	1,23E0	MND	MND	MND	MND	MND	MND
Total use of nonrenewable primary energy resources	MJ	3,54E1	MND	MND	MND	MND	MND	MND
Use of secondary materials	kg	1,06E-2	MND	MND	MND	MND	MND	MND
Use of renewable secondary fuels	MJ	2,23E-2	MND	MND	MND	MND	MND	MND
Use of nonrenewable secondary fuels	MJ	2,03E-4	MND	MND	MND	MND	MND	MND
Use of net fresh water	m^3	2,37E0	MND	MND	MND	MND	MND	MND

21. End of life - Waste

Waste								
Parameter	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste	kg	2,97E-2	MND	MND	MND	MND	MND	MND
Non-hazardous waste	kg	2,29E-1	MND	MND	MND	MND	MND	MND
Radioactive waste	kg	8,88E-5	MND	MND	MND	MND	MND	MND

22. End of life - Output flow

Output flow								
Parameter	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Components for reuse	kg	7,46E-4	MND	MND	MND	MND	MND	MND
Materials for recycling	kg	8,98E-3	MND	MND	MND	MND	MND	MND
Materials for energy recovery	kg	2,4E-2	MND	MND	MND	MND	MND	MND
Exported energy	MJ	1,17E-4	MND	MND	MND	MND	MND	MND

Scenarios and additional technical information (7.3)

23. Electricity in the manufacturing phase (7.3.A3)

Object	Value	Data quality
A3 data quality of electricity and CO2 emission kg CO2 eq. / kWh	**FI 0.235**	The impacts of Finnish electricity were calculated based on Energiateollisuus (2016b) and Statistics Finland (2016), which provide the yearly fuel mixes for electricity production in Finland. Imported electricity has been calculated based on ecoinvent 3.3 database. The impacts include all upstream processes as well as transmission losses.
District heating/cooling data quality and CO2 emissions kg CO2 eq./kWh	**FI 0.072**	Based on specific fuel mix of the district heating plant in Rajamäki (Rajamäen biolämpökeskus) by Nurmijärven Sählö Oy, Finland for 2015 (Energiateollisuus 2016).

24. Transport from production place to user (7.3.2 A4)

N/A

25. End-of-life process description(7.3.4)

N/A

26. Additional technical information

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27. Product data sheet

Find product data sheets from Teknos website https://www.teknos.com/decorative-paints/products/product-search/varnishes-and-waxes/ and https://www.teknos.com/decorative-paints/products/product-search/Furniture-paints/

28. Additional information (7.4)

Air, soil and water impacts during the use phase have not been studied.

29. Bibliography

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations Principles and procedures. ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks. ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines. EN 15804:2012+A1 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products. RTS PCR 2.6.2016 RTS PCR protocol: EPDs published by the Building Information Foundation RTS sr. PT 18 RT EPD Committee. (English version)