



**Environmental
Product
Declaration**

According to EN15804+A2 (+indicators A1)



This declaration is for:
Vivechrom Aquaxyl Varnish

Provided by:
Vivechrom SA



program operator
Stichting MRPI®
publisher
Stichting MRPI®
www.mrpi.nl

MRPI® registration
1.1.00601.2024
date of first issue
4-7-2024
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4-7-2024
expiry date
4-7-2029





COMPANY INFORMATION



Vivechrom SA
Thesi Vathi Pigadi
19600 Mandra Attica
<http://www.vivechrom.gr/>

MRPI® REGISTRATION

1.1.00601.2024

DATE OF ISSUE

4-7-2024

EXPIRY DATE

4-7-2029

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Gert-Jan Vroege, Eco Intelligence. The LCA study has been done by Mart van Assem & Robert Jan Volders, Ecomatters. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPD's of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

Ing. L. L. Oosterveen MSc. MBA
Managing Director MRPI

PRODUCT

Vivechrom Aquaxyl Varnish

DECLARED UNIT/FUNCTIONAL UNIT

All impacts are calculated using the declared unit "decoration of 1 m2 of surface"

DESCRIPTION OF PRODUCT

AQUAXYL VARNISH is a water based woodstain, both for interior and exterior use, giving a beautiful gloss or satin finish that enhances the beauty of the natural wood.

VISUAL PRODUCT



MORE INFORMATION

<https://www.vivechrom.gr/el/proiontikos-katalogos/aquaxyl-varnish>

DEMONSTRATION OF VERIFICATION

CEN standard EN15804 serves as the core PCR(a)

Independent verification of the declaration an data according to

EN15804+A2 (+indicators A1)

internal: external: x

Third party verifier: Gert-Jan Vroege, Eco-Intelligence

[a] PCR = Product Category Rules





DETAILED PRODUCT DESCRIPTION

Aquaxyl varnish is a water based woodstain, both for interior and exterior use. It gives a beautiful gloss or satin finish that enhances the beauty of the natural wood. It is applicable on doors, windows, frames, claddings and any wooden surface. It is odorless and it is applied easily. It is highly flexible and it does not crack, blister or peel. It contains UV filters for effective protection from the sun's ultraviolet rays. It is water repellent and allows the wood to breathe.

Aquaxyl varnish is applied with a brush, roller or spray gun. It is available in colourless, gloss and satin, in 12 ready made satin shades, as well as in 34 gloss and satin shades through VIVECHROM's tinting system CHROMOSYNTHESIS.

Typical Use

Suitable for interior & exterior use on all wooden surfaces.

Application

- Thin with 5-10% (brush, roller), 20-25% (spray gun) with clean water and stir well before use.
- Apply 1-2 coats of AQUAXYL VARNISH. For maximum durability and up to 5 years protection, high quality of the wood and the construction is required and application of minimum 3 coats of coloured AQUAXYL VARNISH.
- When the Colourless 701 is applied, it is lightly milky, but as it dries it creates a totally transparent film.
- Apply the paint and let it dry at temperatures between 10°C to 35°C.

Pack size

0.75L, 2.5L

Production process and conditions of delivery

During varnish production, the raw materials are pre-weighed according to the percentage of each in the formulation. The raw materials in powder form are dispersed in a mixture of binder and solvent in hi speed dispersers (HSD). The amount and type of dispersion is product specific and depends on the type of finish required. Finally, in plant tinters are added to develop the shade, the varnish is thinned to viscosity, filtered and filled into the appropriate packaging container. All paint containers are transported from the production sites to customers in Greece, Cyprus, Albania and Bulgaria.



Component	%
Pigments	Confidential
Binder	Confidential
Additive	Confidential



SCOPE AND TYPE

The type of this EPD is Cradle-to-Gate with options. All major steps from the extraction of natural resources to the final disposal of the product are included in the environmental performance of the manufacturing phase, except those that are not relevant to the environmental performance of the product. This declaration does not imply an indicator result of zero.

This EPD is representative for products produced in Elefsis, Greece and the application market is for customers in Europe. Likewise, for the end-of-life, the fate of the paint product is described within a European context.

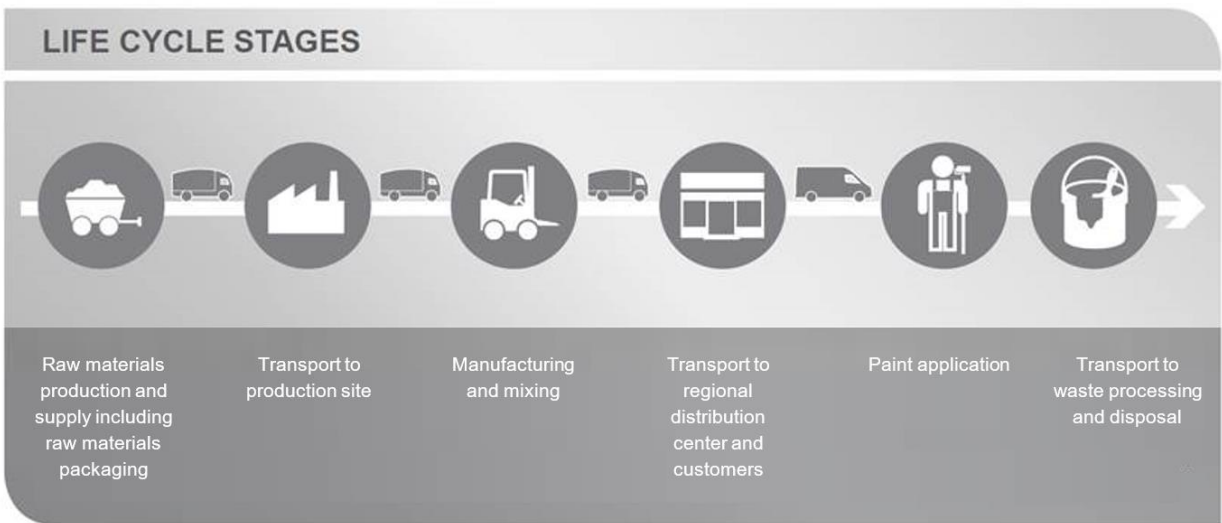
The software LCA for Experts 10.8.0.14 Professional is used to perform the LCA. In the model Ecoinvent 3.10 database was used.

The validity of this EPD is in correspondence with the specifications of the LCA project report.

All impacts associated with the upstream production of materials and energy are included in the system boundaries. Mining activities and controlled landfills are included in the product systems. The emissions and resource extractions derived from these processes are considered elementary exchanges between the product systems and the environment.



PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USER STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
X= Modules Assessed ND= Not Declared																



REPRESENTATIVENESS

This EPD is representative for the following paint products belonging to the Vivechrom Aquaxyl Varnish group:

1. Vivechrom Aquaxyl Varnish Satin
2. Vivechrom Aquaxyl Varnish Gloss

This EPD is representative for the products manufactured in Elefsis, Greece and sold in Europe.



ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	2,12 E-01	1,07 E-02	8,45 E-02	3,07 E-01	1,55 E-02	1,14 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,69 E-03	0,00 E+00	5,80 E-02	0,00 E+00
GWP-fossil	kg CO2 eq.	2,11 E-01	1,07 E-02	1,01 E-01	3,23 E-01	1,55 E-02	3,07 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,69 E-03	0,00 E+00	5,80 E-02	0,00 E+00
GWP-biogenic	kg CO2 eq.	3,36 E-04	5,57 E-06	-1,62 E-02	-1,59 E-02	8,06 E-06	8,30 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	8,77 E-07	0,00 E+00	2,72 E-06	0,00 E+00
GWP-luluc	kg CO2 eq.	1,01 E-04	3,69 E-06	4,66 E-05	1,51 E-04	5,34 E-06	9,14 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,82 E-07	0,00 E+00	6,89 E-07	0,00 E+00
ODP	kg CFC11 eq.	3,56 E-08	2,17 E-10	4,84 E-10	3,63 E-08	3,14 E-10	2,08 E-11	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,41 E-11	0,00 E+00	4,11 E-11	0,00 E+00
AP	mol H+ eq.	1,13 E-03	4,28 E-05	3,05 E-04	1,48 E-03	6,19 E-05	8,83 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	6,74 E-06	0,00 E+00	1,26 E-05	0,00 E+00
EP-freshwater	kg PO4 eq.	4,80 E-05	7,34 E-07	5,29 E-06	5,40 E-05	1,06 E-06	4,46 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,16 E-07	0,00 E+00	1,71 E-07	0,00 E+00
EP-marine	kg N eq.	1,67 E-04	1,61 E-05	6,99 E-05	2,53 E-04	2,33 E-05	5,05 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,53 E-06	0,00 E+00	5,20 E-06	0,00 E+00
EP-terrestrial	mol N eq.	1,64 E-03	1,74 E-04	7,22 E-04	2,54 E-03	2,52 E-04	2,95 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,75 E-05	0,00 E+00	5,67 E-05	0,00 E+00
POCP	kg NMVOC eq.	6,79 E-04	6,75 E-05	2,50 E-04	9,96 E-04	9,76 E-05	4,26 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,06 E-05	0,00 E+00	1,78 E-05	0,00 E+00
ADP-minerals & metals	kg Sb eq.	8,09 E-07	2,91 E-08	3,28 E-07	1,17 E-06	4,21 E-08	3,00 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	4,59 E-09	0,00 E+00	2,82 E-09	0,00 E+00
ADP-fossil	MJ, net calorific value	4,40 E+00	1,57 E-01	1,15 E+00	5,70 E+00	2,27 E-01	1,77 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,47 E-02	0,00 E+00	3,22 E-02	0,00 E+00
WDP	m3 world eq. Deprived	4,83 E-01	1,01 E-03	2,24 E-02	5,07 E-01	1,45 E-03	-7,04 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,58 E-04	0,00 E+00	1,68 E-03	0,00 E+00

- GWP-total = Global Warming Potential total
- GWP-fossil = Global Warming Potential fossil fuels
- GWP-biogenic = Global Warming Potential biogenic
- GWP-luluc = Global Warming Potential land use and land use change
- ODP = Depletion potential of the stratospheric ozone layer
- AP = Acidification Potential, Accumulated Exceedence
- EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
- EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment
- EP-terrestrial = Eutrophication Potential, Accumulated Exceedence
- POCP = Formation potential of tropospheric ozone photochemical oxidants
- ADP-minerals&metals = Abiotic Depletion Potential for non-fossil resources [2]
- ADP-fossil = Abiotic Depletion for fossil resources potential [2]
- WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

Disclaimer [2]

- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator





ENVIRONMENT IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	1,97 E-08	8,45 E-10	3,59 E-09	2,41 E-08	1,22 E-09	1,43 E-10	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,33 E-10	0,00 E+00	2,11 E-10	0,00 E+00
IRP	kBq U235 eq.	2,04 E-02	1,90 E-04	3,30 E-03	2,38 E-02	2,75 E-04	5,91 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,99 E-05	0,00 E+00	2,81 E-05	0,00 E+00
ETP-fw	CTUe	5,50 E+00	3,71 E-02	2,42 E-01	5,77 E+00	5,37 E-02	4,55 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,85 E-03	0,00 E+00	2,40 E-02	0,00 E+00
HTP-c	CTUh	1,11 E-10	6,70 E-11	1,84 E-10	3,62 E-10	9,68 E-11	1,83 E-11	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,05 E-11	0,00 E+00	8,36 E-11	0,00 E+00
HTP-nc	CTUh	1,88 E-09	9,37 E-11	5,14 E-10	2,49 E-09	1,36 E-10	9,85 E-10	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,48 E-11	0,00 E+00	2,22 E-10	0,00 E+00
SQP	----	5,60 E-01	1,57 E-01	1,71 E+00	2,43 E+00	2,28 E-01	2,52 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,48 E-02	0,00 E+00	5,44 E-02	0,00 E+00

PM = Potential incidence of disease due to PM emissions
 IRP = Potential Human exposure efficiency relative to U235 [1]
 ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
 HTP-c = Potential Comparative Toxic Unit for humans [2]
 HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
 SQP = Potential soil quality index [2]

Disclaimer [1]
 - This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle.
 It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste.

Disclaimer [2]
 - The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.



OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	0,00 E+00	0,00 E+00	5,37 E-04	5,37 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NHWD	kg	0,00 E+00	0,00 E+00	1,59 E-03	1,59 E-03	0,00 E+00	2,90 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E-01	1,98 E+00
RWD	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
CRU	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MFR	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,76 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MER	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EEE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ETE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

HWD = Hazardous Waste Disposed
 NHWD = Non Hazardous Waste Disposed
 RWD = Radioactive Waste Disposed
 CRU = Components for reuse
 MFR = Materials for recycling
 MER = Materials for energy recovery
 EEE = Exported Electrical Energy
 ETE = Exported Thermal Energy





RESOURCE USE per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,60 E-01	2,49 E-03	5,38 E-01	7,01 E-01	3,60 E-03	1,19 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,92 E-04	0,00 E+00	4,12 E-04	0,00 E+00
PERM	MJ	1,28 E-05	3,57 E-10	1,63 E-08	1,28 E-05	5,16 E-10	1,43 E-10	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,61 E-11	0,00 E+00	1,00 E-10	0,00 E+00
PERT	MJ	1,60 E-01	2,49 E-03	5,38 E-01	7,01 E-01	3,60 E-03	1,19 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,92 E-04	0,00 E+00	4,12 E-04	0,00 E+00
PENRE	MJ	4,40 E+00	1,57 E-01	1,15 E+00	5,71 E+00	2,27 E-01	1,77 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,47 E-02	0,00 E+00	3,22 E-02	0,00 E+00
PENRM	MJ	6,63 E-07	0,00 E+00	2,55 E-10	6,63 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	4,40 E+00	1,57 E-01	1,15 E+00	5,71 E+00	2,27 E-01	1,77 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,47 E-02	0,00 E+00	3,22 E-02	0,00 E+00
SM	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m3	1,13 E-02	2,34 E-05	5,51 E-04	1,19 E-02	3,39 E-05	-1,64 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,69 E-06	0,00 E+00	3,91 E-05	0,00 E+00

- PERE = Use of renewable energy excluding renewable primary energy resources
- PERM = Use of renewable energy resources used as raw materials
- PERT = Total use of renewable primary energy resources
- PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials
- PENRM = Use of non-renewable primary energy resources used as raw materials
- PENRT = Total use of non-renewable primary energy resources
- SM = Use of secondary materials
- RSF = Use of renewable secondary fuels
- NRSF = Use of non-renewable secondary fuels
- FW = Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	Kg C	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
BCCpa	kg C	0,00 E+00	0,00 E+00	-5,92 E-03	-5,92 E-03	0,00 E+00	5,92 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

- BBCpr = Biogenic carbon content in product
- BCCpa = Biogenic carbon content in packaging





CALCULATION RULES

Cut off criteria

The cut-off is considered in the raw material supply stage (A1). Cut-off of inputs comprises of the raw materials, for which no appropriate proxies were found. In this study there were no cut-off inputs. For recycling of waste packaging material (metal and plastic), a cut-off approach was followed. The cut-off point is chosen to be the end of waste treatment.

Data quality and data collection period

Specific data was collected from AkzoNobel through a questionnaire, including inquiries about paint characteristics and packaging, logistics data (e.g. transport), production information and end-of-life. The data collection period for specific data was the year 2022.

Data gaps (i.e. transport data, end of life scenarios) were covered with data generic values for transport as described in the Product Environmental Footprint Category Rules - Decorative Paints document version 1.0 published by CEPE and reviewed in April 2018. Further data gaps (i.e. end-of-life transport data) were covered with data from internal AkzoNobel LCA studies concerning the same type of products (paints and coatings). Generic data (i.e. upstream acquisition and production of raw materials, energy generation, transport, waste treatment processes) was selected from Ecoinvent 3.10 database. In the case of missing data, a relevant proxy was searched and adjusted to the corresponding unit process.

Allocation procedure

To allocate the emissions and inputs to the manufactured products, the decision-hierarchy in ISO 14044 is used (ISO 2006). It is not possible to sub-divide the site data into a more detailed level or find physical causalities between inputs and outputs, thus allocation is done based on mass, considering the annual production of paint product for each site. The paint production is basically a process of mixing ingredients and, therefore, the environmental impact is fairly likely to be related to the mass of the products.

Parameter	Unit	Value
VOC Content	g/l	95,00
Density	kg/l	1,00
Coverage	m ² /l	10,50
Number of layers	Quantity	2,00
Total product used	kg/m ²	0,20

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the Vivechrom Aquaxyl Varnish manufacturing process, as well as waste processing up to the end-of waste state.

A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road.

Site	Elefsis, Greece
Vehicle type used for transport	Truck
Distance, km	460
Capacity	>32 t ,64% payload

A3. Manufacturing

This module covers the manufacturing of Vivechrom Aquaxyl Varnish and includes all processes linked to production such as storing, mixing, packing and internal transportation. Use of electricity, fuels and auxiliary materials in paint production is taken into account as well.

Data regarding paint production was provided for the manufacturing site where the Vivechrom Aquaxyl Varnish was produced. Furthermore, the transportation distances and transportation modes for transportation to distribution centre and to customer were used from the PCR for decorative coatings. Primary data and site-specific data were retrieved. For electricity sources for Elefsis, Greece 100% solar power was used from the Ecoinvent 3.10 database. For upstream (raw material processes) and downstream processes (application, use, and waste processing) generic data is used when no specific data is obtained.

The construction site data includes lighting, heating, offices, etc. The manufacture of production equipment and infrastructure is not included in the system boundary.

A4. Transport to Regional Distribution Centre and customer

All paint containers are transported from the production facility into a distribution centre and then finally to the customer. On average, the transport characteristics for this life cycle stage are the following

Production site	Elefsis, Greece	Elefsis, Greece
Coatings transport type	Transport from factory to RDC	Transport from RDC to PoS
Transport Type	Truck	Truck
Distance (km)	350	370
Capacity	>32 t ,64% payload	>32 t ,64% payload

A5. Application and use

This module includes the environmental aspects and impacts associated with the application and of the paint. It is assumed that no energy is required during the application of this paint. The use of paintbrushes and other appliances used during application are not included. There are some raw materials added in the paint formulations which contain small amounts of solvents. The VOC emissions during application of paint are included in this module.

C2. Transport to incineration or landfill

This module includes one-way transportation distance of the demolition or sorting site to the dump site.

End-of-life transport type	Transport to waste processing
Vehicle type	Truck
Distance	80
Capacity utilisation	60%

C3. Waste processing and C4. Disposal

The end of life stage is encompassed in these modules. It is assumed that paint is used as interior paint and exterior paint. In both cases, it is assumed that part of the paint is lost during application and the rest is applied.

Classification of paint, based on function	% of sold paint to landfill	% of sold paint to incineration
Interior Masonry Wall	88%	12%
Exterior, Trim and other paints	88%	12%

DECLARATION OF SVHC

None.

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**REMARKS**

None.