

Environmental Product Declaration



THE INTERNATIONAL EPD® SYSTEM



EPD of Multiple products based on the representative product result.
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Diamond Oil Active (Representative Product)

Variants of the representative Product: Diamond Oil Active white, Diamond Oil Active Extra white, Diamond Oil Active 20% white, Diamond Oil Active Beton Grey, Diamond Oil Active Sand Grey, Diamond Oil Active Carbon black, Diamond Oil Active Chocolate, Diamond Oil Active Smoke and Diamond Oil Active Caramel.

from

WOCA DENMARK



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

The International EPD® System, www.environdec.com

EPD International AB

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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): Construction Product, 2019:14, version 1.3.4 and CPC code 351.

PCR review was conducted by: Martin Erlandsson, IVL Swedish Environmental Research Institute, and Secretariat of the International EPD System
Contact: martin.erlandsson@ivl.se

Life Cycle Assessment (LCA)

LCA accountability: Sussan Khorami chemical engineer at WOCA Denmark.
Contact: skh@wocadenmark.com

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ EPD verification by individual verifier

Third-party verifier: Sigita Židonienė, UAB Vesta Consulting.

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. This EPD is intended for both B2B and B2C.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation

factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: WOCA Denmark

Contact: Sussan Khorami

Telephone: 0045 50806878

Email: skh@wocadenmark.com

Description of the organisation: WOCA Denmark is a Danish company specializing in the development and production of environmentally friendly wood care products. Their offerings include solutions for the treatment, maintenance, and cleaning of wood surfaces.

Product-related or management system-related certifications: ISO 9001- and 14001-certificates

Name and location of production site(s): WOCA Denmark A/S, Tværvej 6, 6640 Lunderskov, Danmark <https://wocadenmark.com/products/products/>

Product information

Product name: EPD covers multiple products: Diamond Oil Active White, Diamond Oil Active Extra White, Diamond Oil Active 20% White, Diamond Oil Active Beton Grey, Diamond Oil Active Sand Grey, Diamond Oil Active Carbon Black, Diamond Oil Active Chocolate, Diamond Oil Active Smoke, and Diamond Oil Active Caramel and is based on a representative product, Diamond Oil Active, which serves as the base product for all variants, as they share an identical formulation and production process, with the only difference being the type and amount of colour pigments used.

Product identification: Products is identified by name.

Product description: Diamond Oil Active is a 1-component low-odor oil, easy to apply for wooden floors, tabletops, and furniture. It has hyper cross-linking technology creates a water-repellent, non-slip surface with a dry matter content of approx. 99%.

Geographical scope: Global

Technical Data

Parameters	
VOC	10 g/l, maximum
VOC content	(A/i (SB)): 500 g/l
Shelf life	3 years
Application Temperature	+15-30°C and approx. 50% air humidity
Coverage	20-25 m ² /L
Colour	Smoke Brown, Natural, Extra White, White, Concrete Grey, Sand Grey, Carbon Black, Chocolate Brown, Caramel Brown
Cleaning of tools	Use WOCA Solvent +10-25°C
Storage	Keep out of reach of children. Do not expose to heat (e.g. sunlight). Store frost-free during winter and cool during summer.
Packaging	250 ML, 750 ML, 1 L, 2.5 L
Non-slip (DIN 51130)	R10
Viscosity	40-45 Sec. DIN Cup

Dilution	WOCA Solvent (does not normally need to be diluted).
Solid content	95-100%
Odour	Faint

<https://wocadenmark.com/product/diamond-oil-active/>

LCA information

Functional unit / declared unit: 1 kg Diamond Oil Active

Reference service life: 10 years

Time representativeness: April 2023 to May 2024.

Database(s) and LCA software used: Software, Mobius version 1.0.198 and Ecoinvent v.3.9.1 database and EF 3.1.

Cut-off Rules: Neglected flows in all modules account for less than 1% of the total energy use and mass. Cut-off rules do not apply to Module A1, which is modelled at 100%. Capital goods, infrastructure, and employee commuting are excluded.

Allocation method: Waste outputs are given by total products manufactured within 12 months. The electricity consumption used in this assessment was based on a comparable product within the same production line that is known to have higher energy requirements. This product represents a worst-case scenario in terms of energy demand. In order to ensure a conservative and transparent approach, the higher electricity consumption associated with this specific product was applied to the declared product.

Description of system boundaries: Cradle to gate (A1-A3) with end life modules C1-C4 and module D

Product stage: Raw material supply, Transport and Manufacturing (A1-A3)

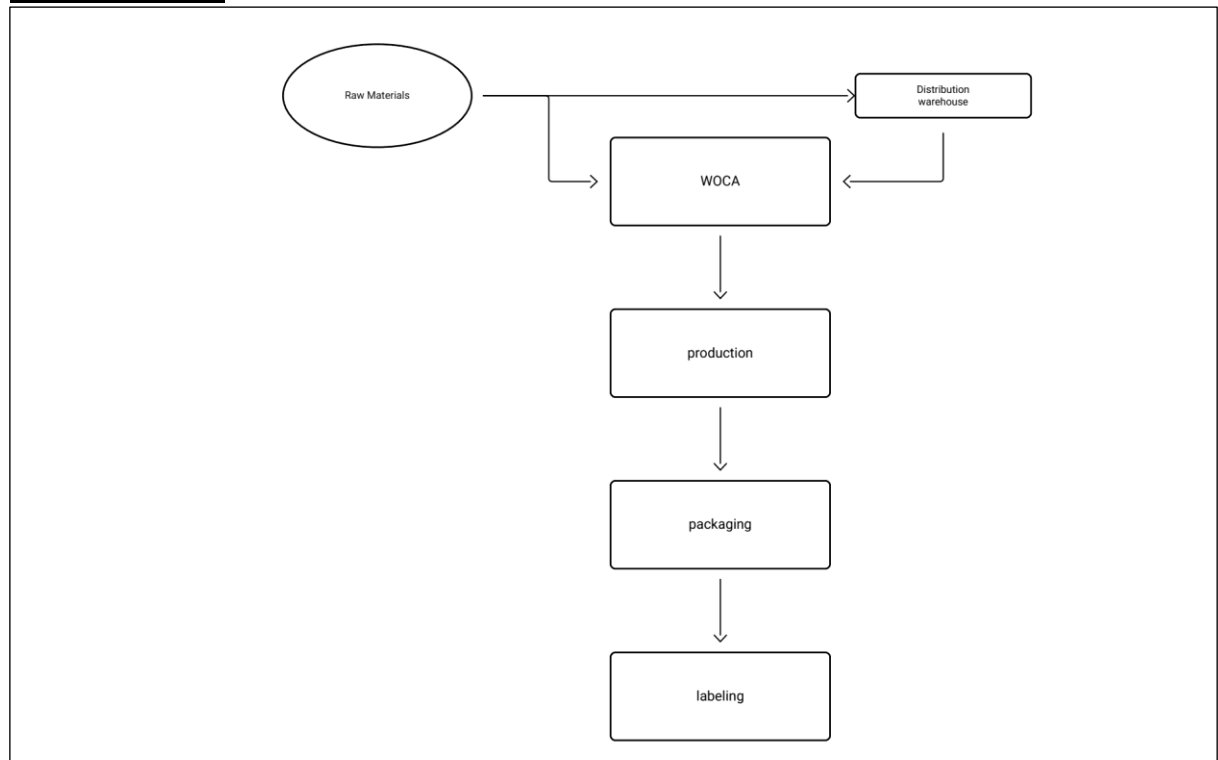
- A1-A2: extraction, supply and transport of raw materials to WOCA.
- A3: At this stage, all the elementary input and output flows associated with the production of Diamond Oil Active have been inventoried, using primary data on the quantity and type of raw materials, packaging, labelling, energy sources, water usage, and the waste generated.

End of life Stage (C1-C4)

- **C1:** The energy associated with the demolition of the substrate structure is assumed to be zero.
- **C2:** Transportation to disposal is assumed to be 30 km, with the transportation mode assumed to be freight by lorry, unspecified.
- **C3:** No waste processing options are considered.
- **C4:** It is assumed that 50% of the product remains after its 10-year of service life, and this remaining quantity will be incinerated.

Module D: Benefits beyond the system boundary are reported, as energy benefits occur from the product burning in the form of electricity and thermal benefits. Since incineration is considered the end-of-life treatment in Module C4, the corresponding energy benefits are credited in Module D.

System diagram:



More information:

Diamond Active Oil is produced at a manufacturing facility in Denmark, utilizing the Danish electricity residual mix. Emission factors for electricity have been used to calculate the environmental impact associated with electricity consumption, based on the residual mix data provided by the electricity supplier.

All raw materials undergo rigorous performance testing before approval and are stored in compliance with regional regulations and legislation.

For the Life Cycle Assessment (LCA), no by-product allocation was necessary. To ensure data completeness and avoid cut-off errors, any data gaps were addressed using appropriate generic proxies.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	ND	ND	ND	ND	NR	NR	NR	NR	NR	x	x	x	x	x
Geography	Global	Global	DK										DK	DK	DK	DK	DK
Specific data used	21.78%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	+4.72 / -9.97%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

System boundaries and processes included in the LCA (X included ND: Not Declared and NR= Not relevant)

The EPD applies to multiple products, based on a representative product from a single manufacturing site, resulting in a 0% value reported in the table.

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-%	Biogenic material, weight-kg C/ declared unit
Long oil alkyd, renewable content 95%	53.55 E-02	0	95	0.40
Long oil alkyd	3.30 E-01	0	85	0.20
Urethane modified linseed oil	1.25 E-01	0	100	0.10
Drying Coat 1	4.50 E-03	0	0	0

Drying Coat 2	5.00 E-03	0	0	0
TOTAL	1	0		0.70
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg	
Tinplate	1.95E-02	1.95	0	
Label	6.37E-07	0.40	0	
TOTAL	1.95 E-02	2.35	0	

Note: The biogenic content of the raw materials was determined based on the percentage of biogenic carbon content provided by the supplier, and the total carbon content, which was calculated manually from the molecular structure of the raw material components.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
None			

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	1.33E+00	0.00E+00	2.23E-03	0.00E+00	1.20E+00	0.00E+00
GWP-biogenic**	kg CO ₂ eq.	-1.42E+00	0.00E+00	1.87E-06	0.00E+00	5.47E-05	0.00E+00
GWP-luluc	kg CO ₂ eq.	1.02E+00	0.00E+00	1.09E-06	0.00E+00	3.03E-06	0.00E+00
GWP-total	kg CO ₂ eq.	9.32E-01	0.00E+00	2.23E-03	0.00E+00	1.20E+00	0.00E+00
ODP	kg CFC 11 eq.	4.23E-08	0.00E+00	4.89E-11	0.00E+00	3.45E-10	0.00E+00
AP	mol H ⁺ eq.	1.27E-02	0.00E+00	1.04E-05	0.00E+00	1.03E-04	0.00E+00
EP-freshwater	kg P eq.	8.33E-04	0.00E+00	1.83E-08	0.00E+00	1.38E-07	0.00E+00
EP-marine	kg N eq.	9.62E-03	0.00E+00	4.10E-06	0.00E+00	4.70E-05	0.00E+00
EP-terrestrial	mol N eq.	4.79E-02	0.00E+00	4.42E-05	0.00E+00	5.20E-04	0.00E+00
POCP	kg NMVOC eq.	6.21E-03	0.00E+00	1.55E-05	0.00E+00	1.34E-04	0.00E+00
ADP-minerals&metals*	kg Sb eq.	7.66E-06	0.00E+00	6.94E-09	0.00E+00	2.19E-08	0.00E+00
ADP-fossil*	MJ	1.38E+01	0.00E+00	3.22E-02	0.00E+00	1.03E-01	0.00E+00
WDP*	m ³	1.61E+00	0.00E+00	1.41E-04	0.00E+00	-5.57E-03	0.00E+00

Acronyms	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 Exceedance; 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 Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption
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* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

The impact assessment results presented are only relative expressions and do not indicate the endpoints of the impact categories, the exceeding of threshold values, safety margins, or risks. Since Module C is included in this assessment, users are discouraged from using the results of Modules A1–A3 (or A1–A5 for services) without also considering the results of Module C.

** Approximately 50% of the product's biogenic carbon content evaporates during the use phase; however, this emission is not reported in this EPD.

Additional mandatory and voluntary impact category indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq.	2.36E+00	0.00E+00	2.23E-03	0.00E+00	1.20E+00	0.00E+00
Particulate Matter	diseases inc	1.31E-07	0.00E+00	2.19E-10	0.00E+00	8.50E-10	0.00E+00
Ionizing radiation, human health (IRP)	kBq U235 eq	2.08E-02	0.00E+00	1.67E-05	0.00E+00	8.02E-05	0.00E+00
Eco-toxicity - freshwater (ETP-fw)	CTUe	7.45E+01	0.00E+00	1.58E-02	0.00E+00	3.97E-01	0.00E+00
Human toxicity, cancer effect (HTP-c)	CTUh	1.88E-09	0.00E+00	1.20E-12	0.00E+00	1.49E-09	0.00E+00
Human toxicity, non-cancer effects (HTP-nc)	CTUh	2.59E-08	0.00E+00	2.50E-11	0.00E+00	4.57E-09	0.00E+00
Sum of Land use	Pt	1.12E+02	0.00E+00	2.42E-02	0.00E+00	3.85E-02	0.00E+00
<i>Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017</i>							

Use of Resource

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1.66E+01	0.00E+00	5.09E-04	0.00E+00	3.05E-03	0.00E+00
PERM	MJ	1.09E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.75E+01	0.00E+00	5.09E-04	0.00E+00	3.05E-03	0.00E+00
PENRE	MJ	1.42E+01	0.00E+00	3.22E-02	0.00E+00	1.12E-01	0.00E+00
PENRM	MJ	3.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.75E+01	0.00E+00	3.42E-02	0.00E+00	1.12E-01	0.00E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	7.68E-02	0.00E+00	4.51E-06	0.00E+00	8.19E-05	0.00E+00

Acronyms	<p>PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary 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 material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water</p>						
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Note: As the LCA software could not distinguish between energy carriers and energy materials, the renewable energy indicators are reported only as PERT and PENRT. The indicator PERM (renewable energy used as raw material) was manually calculated by multiplying the mass (kg) of each material and packaging component with its respective renewable energy content.

PERE (renewable energy excluding raw materials) was then derived using $PERE = PERT - PERM$.

Waste Production

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6.12E-05	0.00E+00	2.03E-07	0.00E+00	1.94E-06	0.00E+00
Non-hazardous waste disposed	kg	3.33E-01	0.00E+00	2.03E-03	0.00E+00	2.01E-02	0.00E+00
Radioactive waste disposed	kg	1.46E-05	0.00E+00	1.08E-08	0.00E+00	5.83E-08	0.00E+00

Output flow indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity (EEE)*	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.34E+00
Exported energy, thermal (EET)*	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E+01

Note: Energy recovery was calculated based on the remaining quantity of oil after a 10-year service life. This quantity was multiplied by the lower calorific value (LCV) of each raw material used in the product formulation. The total recovered energy was then proportionally allocated between Electrical Energy Exported (EEE) and Thermal Energy Exported (EET), based on energy conversion efficiencies in line with standard end-of-life incineration scenarios.

Additional environmental information

• Module A3: Energy Scenario

Electricity consumption during production (Modules A1–A3) is modelled using the Danish residual electricity mix, as provided by OK A/S. Since no Guarantees of Origin (GOs) are claimed and the manufacturer does not have operational control over the electricity sourcing, a location-based modelling approach has been applied in accordance with EN 15804. The Danish residual mix is predominantly fossil-based, with coal and natural gas being the main contributors. The composition of the residual mix is as follows: 44.3% coal and lignite, 29.2% natural gas, 8.2% oil and fossil waste, 8.4% nuclear, 9.4% renewable energy from wind, water, and solar, and 0.4% from biomass and bio-waste.

Electricity Input for Manufacturing (A1–A3)

Scenario parameter	Global warming potential (A1–A3) value	Source
Electricity, Denmark (residual mix – fossil-dominated)	0.499 kg CO ₂ e / kWh	Danish Residual Mix 2022 from AIB, modeled in Mobius using Eco invent 3.9.1

• End of life Scenario Information

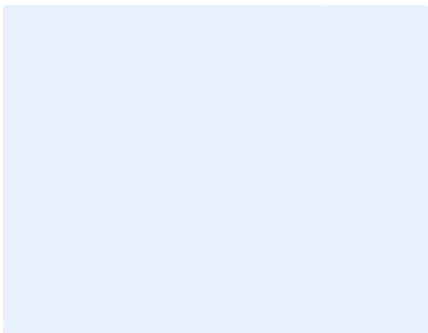
At end of life, 50% of the product is assumed to have evaporated during use. The remaining 50% is incinerated with R1 energy recovery efficiency below 60%, classified as disposal (Module C4). Energy recovery (thermal and electrical) is credited in Module D, and transport to incineration is assumed to be 30 km by freight lorry. Biogenic CO₂ emissions from evaporation and avoided emissions from exported energy are included.

End-of-Life Scenario Information for Diamond Active Oil

Scenario	Value
Data collection process – kg Collected as mixed construction waste	0.5kg
Recovery process – kg for reuse	0kg
Recovery process – kg for recycling	0kg
Recovery process – kg for energy recovery	0 kg Everything goes for final disposal as R1 < 60%
Disposal (total) – kg for final deposition	0.5kg (incineration, counted under Module C4)
Scenario assumptions e.g. transport	The dismantled product is transported 30 km by freight lorry for incineration.

References

General Programme Instructions of the International EPD® System. Version 4
PCR 2019:14 Construction Products version 1.3.4 and JRC characterization factors (version 3.1) for Construction Products.
ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO14040:2006.
ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006
ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures', International Organization for Standardization, ISO14025:2006.
Registry of SVHC intentions until outcome - ECHA
Software: Mobius - by Ecochain
Database: Eco invent v. 3.9.1
WOCA Denmark: <https://wocadenmark.com/products/products/>



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