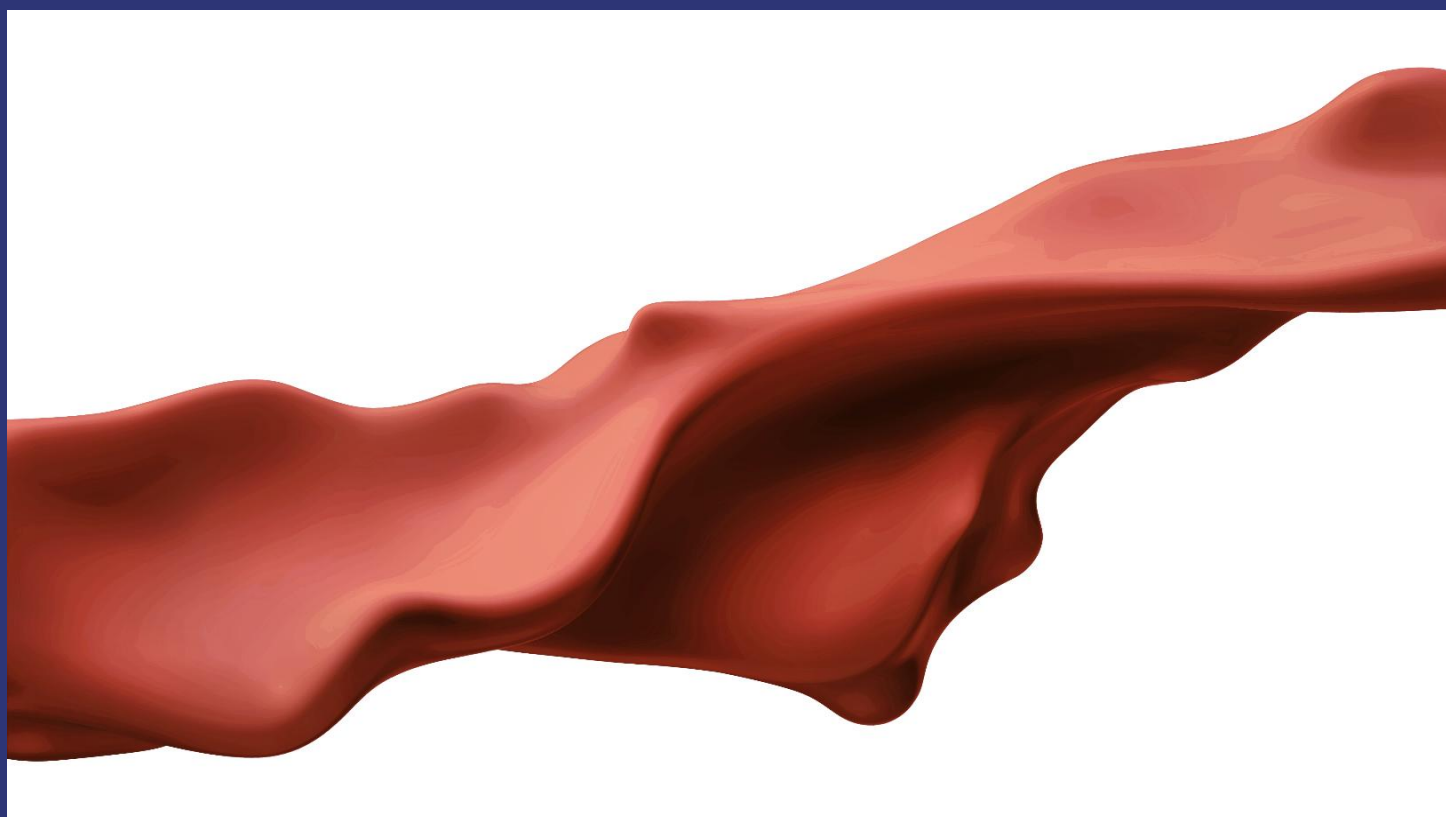


**Environmental
Product
Declaration**

According to ISO14025+EN15804 A2 (+indicators A1)

This declaration is for:
Iron oxide slurry (red)

Provided by:
Harold Scholz & Co. GmbH



MRPI® registration:
1.1.00860.2025

Program operator:
Stichting MRPI®
Publisher:
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www.mrpi.nl

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COMPANY INFORMATION

Harold Scholz & Co. GmbH
Ickerottweg 30
45665
Recklinghausen
Germany
0049236198880
Produktsicherheit@harold-scholz.de
<https://www.harold-scholz.de/>

MRPI® REGISTRATION

1.1.00860.2025

DATE OF THIS ISSUE

26-6-2025

EXPIRY DATE

26-6-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Anne Kees Jeeninga, Advieslab v.o.f.. The LCA study has been done by Mando Kort & Hans Jurie Potgieter, Ecochain Technologies B.V.. The certificate is based on an LCA-dossier according to ISO14025+EN15804 A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs 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

PRODUCT

Iron oxide slurry (red)

DECLARED UNIT / FUNCTIONAL UNIT

1 Mass (t)

DESCRIPTION OF PRODUCT

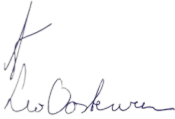

Inorganic, red, liquid pigment for coloring various building materials

VISUAL PRODUCT



MORE INFORMATION

<https://www.harold-scholz.de/pigmente/eisenoxid>

<p>Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI</p>	<p>DEMONSTRATION OF VERIFICATION</p>
	<p>CEN standard EN15804 serves as the core PCR [1]</p>
	<p>Independent verification of the declaration an data according to ISO14025+EN15804 A2 (+indicators A1) Internal: External: X</p>
	<p>Third party verifier: Anne Kees Jeeninga, Advieslab v.o.f. </p>
	<p>[1] PCR = Product Category Rules</p>

DETAILED PRODUCT DESCRIPTION (PART 1)

Iron oxide slurry (red) is a red, liquid pigment supply form with optimized dispersibility properties for coloring construction materials with the ability to achieve a wide range of color shades from rose to red, depending on its pigmentation level in the corresponding material.

Materials	Percentage
Pigment	60%
Water	30%
Additives	10%

DETAILED PRODUCT DESCRIPTION (PART 2)

This pigment slurry is based on iron oxide, which is chemically classified as hematite and represents a product from a calcination process coming predominantly from a sustainable production that synthesizes the pigment from a chemical reaction of iron scrap and nitrobenzene, or alternatively from a synthesis where caustic soda and iron sulfate are used.

Safety Notation of the product according to REACH is the following: H 317: May cause allergic skin reactions. Furthermore this product must fulfil the requirements in accordance to DIN EN 12878. Especially water-soluble substances and chlorides must be limited in the pigment preparation for steel reinforced concrete products.

DETAILED PRODUCT DESCRIPTION (PART 3)

The product is shipped in IBC containers (bulk). The IBC is modelled based on return/reuse.

Packaging	Weight
IBC container	57.7 kg

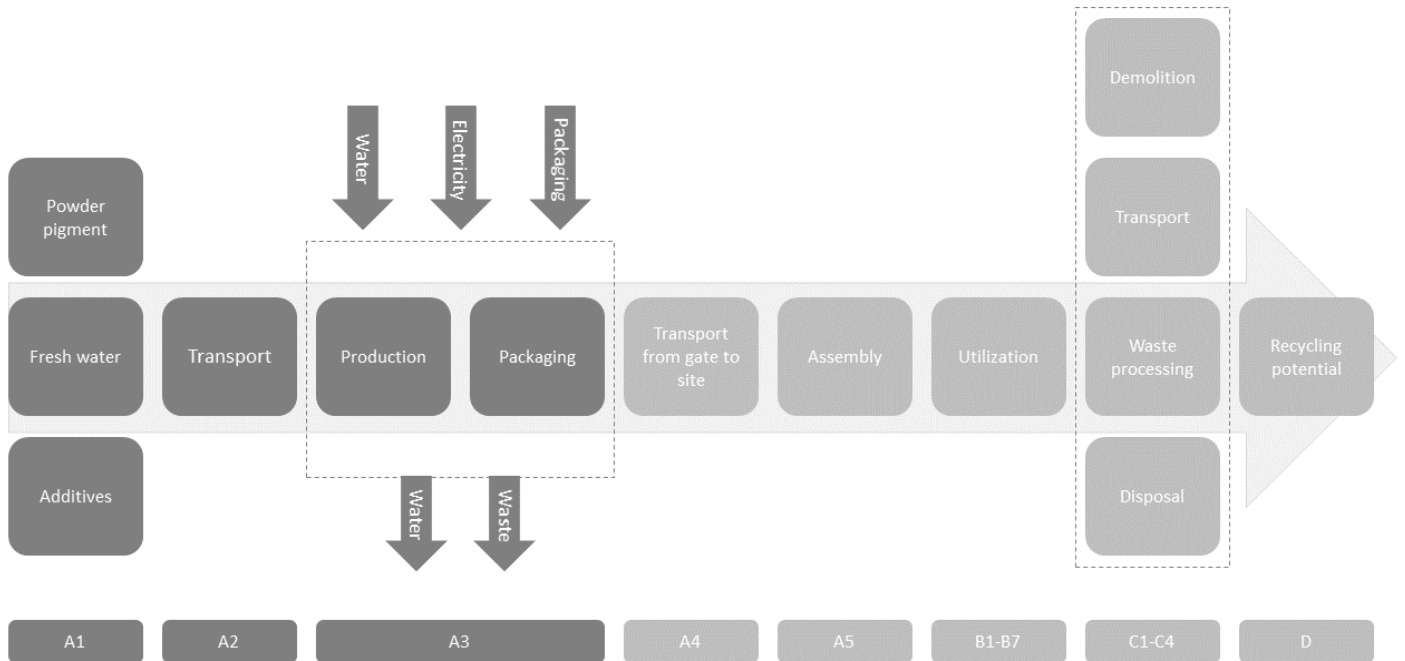
SCOPE AND TYPE

Produced in Germany, sold in Europe. Based on datasets from ecoinvent version 3.6, incorporated into Ecochain Helix version 4.3.1. This is a specific EPD.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE 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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

X = Modules Assessed

ND = Not Declared



ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE kg Sb eq.	5,20E-03	2,56E-04	6,01E-04	6,05E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF MJ	5,48E+03	1,50E+02	8,73E+02	6,51E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP kg CO2 eq.	1,17E+03	9,81E+00	5,32E+01	1,23E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP kg CFC11 eq.	1,36E-05	1,82E-06	5,85E-06	2,12E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP kg ethene eq.	2,84E-01	5,89E-03	1,22E-02	3,02E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP kg SO2 eq.	2,26E+00	4,22E-02	9,56E-02	2,39E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP kg (PO4) 3 eq.	3,98E-01	8,43E-03	1,12E-02	4,18E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Toxicity indicators and ECI (Dutch market)

HTP kg DCB eq.	1,73E+03	4,20E+00	1,14E+01	1,74E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FAETP kg DCB eq.	7,06E+02	1,23E-01	2,07E-01	7,06E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAETP kg DCB eq.	5,97E+05	4,39E+02	7,18E+02	5,98E+05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETP kg DCB eq.	5,78E+00	1,49E-02	6,32E-01	6,42E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ECI euro	3,09E+02	1,18E+00	4,38E+00	3,14E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF kg Sb eq.	2,64E+00	7,20E-02	4,20E-01	3,13E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ADPE	=	Abiotic Depletion Potential for non-fossil resources
ADPF	=	Abiotic Depletion Potential for fossil resources
GWP	=	Global Warming Potential
ODP	=	Depletion potential of the stratospheric ozone layer
POCP	=	Formation potential of tropospheric ozone photochemical oxidants
AP	=	Acidification Potential of land and water
EP	=	Eutrophication Potential
HTP	=	Human Toxicity Potential
FAETP	=	Fresh water aquatic ecotoxicity potential
MAETP	=	Marine aquatic ecotoxicity potential
TETP	=	Terrestrial ecotoxicity potential
ECI	=	Environmental Cost Indicator
ADPF	=	Abiotic Depletion Potential for fossil resources

ENVIRONMENTAL 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.	2,43E+02	9,90E+00	5,68E+01	3,10E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-fossil	kg CO2 eq.	2,40E+02	9,89E+00	5,16E+01	3,02E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-biogenic	kg CO2 eq.	8,61E+02	6,01E-03	3,96E+00	8,65E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-luluc	kg CO2 eq.	1,91E-01	3,50E-03	1,21E+00	1,41E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq.	4,90E-01	2,28E-06	6,61E-06	4,90E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	mol H+ eq.	6,26E+00	5,63E-02	1,23E-01	6,44E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-fresh water	kg PO4 eq.	1,43E+00	8,14E-05	3,40E-04	1,43E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg N eq.	1,84E+04	2,02E-02	2,08E-02	1,84E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol N eq.	2,81E+00	2,22E-01	3,06E-01	3,34E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg NMVOC eq.	3,08E+01	6,35E-02	7,36E-02	3,10E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals	kg Sb eq.	4,24E-03	2,56E-04	6,01E-04	5,10E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil	MJ, net calorific value	5,21E+03	1,52E+02	7,76E+02	6,14E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WDP	m3 world eq. Deprived	1,22E+02	4,66E-01	1,20E+02	2,43E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenic total

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 [1]

ADP-fossil = Abiotic Depletion for fossil resources potential [1]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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.

ENVIRONMENTAL 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	9,03E-06	8,93E-07	7,55E-07	1,07E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq.	7,02E+00	6,64E-01	4,36E-01	8,12E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	4,02E+03	1,23E+02	4,41E+02	4,59E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	1,23E-07	4,39E-09	1,99E-08	1,47E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	2,74E-06	1,47E-07	5,14E-07	3,40E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP	-	5,92E+02	1,30E+02	3,93E+02	1,11E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- 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 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	3,14E-03	3,88E-04	8,88E-04	4,42E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NHWD	kg	5,58E+01	9,41E+00	5,87E-01	6,58E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RWD	kg	2,34E-01	1,03E-03	5,03E-04	2,35E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7,72E+02	2,18E+00	9,06E+02	1,68E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERT	MJ	7,72E+02	2,18E+00	9,06E+02	1,68E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRE	MJ	2,40E+04	1,61E+02	8,57E+02	2,51E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRM	MJ	7,20E+01	0,00E+00	0,00E+00	7,20E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRT	MJ	2,41E+04	1,61E+02	8,57E+02	2,51E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SM	kg	2,82E+02	0,00E+00	0,00E+00	2,82E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FW	m3	5,07E+00	1,72E+02	2,85E+00	7,94E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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
NSRF	=	Use of non-renewable secondary fuels
FW	=	Use of net fresh water

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

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

BCCpr	=	Biogenic carbon content in product
BCCpa	=	Biogenic carbon content in packaging

CALCULATION RULES (PART 1)

This entails a cradle-to-gate analysis (A1-A3). Technical product information was requested from the manufacturers and the components were modeled based on the technical product information provided by the manufacturers.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

All materials and their transportation distances have been taken into account. For the energy consumption used during production, a mass allocation was done for a full production year. Electricity is modelled based on own production of PV and green electricity from the grid. These datasets have a GWP per kWh of 0.079 and 0.05 respectively.

DECLARATION OF SVHC

None of the substances in the product are on the 'Candidate List of Substances of Very High Concern for Authorisation' (SVHC) or do not exceed the European Chemicals Agency threshold.

REFERENCES

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