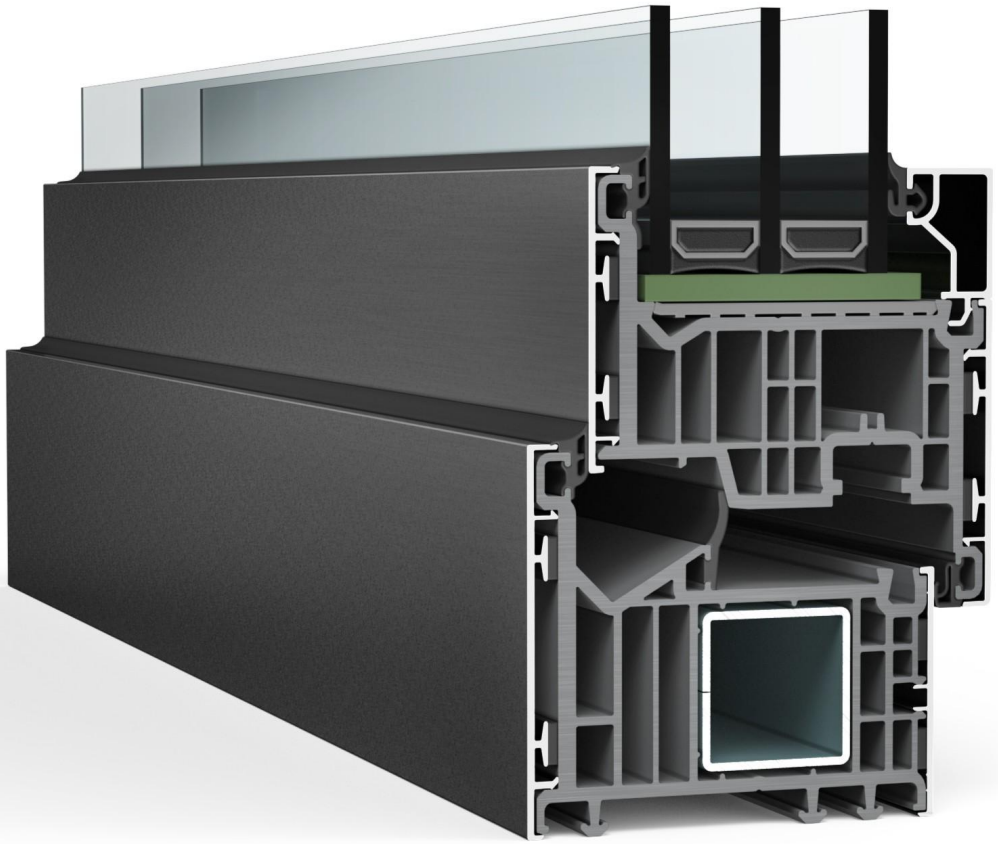
Result summary

AluConnect Profile System

VEKA AG

Calculation number:	ReTHiNK-164048
Generation on:	10-08-2026
Issue date:	10-08-2026
Valid until:	10-08-2031
Status:	verified



1 General information

1.1 PRODUCT

AluConnect Profile System

1.2 VALIDITY

Issue date: 10-08-2026

Valid until: 10-08-2031

1.3 OWNER OF THE DECLARATION

Declaration owner: VEKA AG

Address: Dieselstraße 8, D-48324 Sendenhorst, Germany

E-mail: info@veka.com

Website: www.veka.com

Production location: VEKA AKTIENGESELLSCHAFT

Address production location: Dieselstraße 8, 48324 Sendenhorst, Germany

1.4 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804+A2:2019 serves as the core PCR.

☐ Internal ☒ External

Vijay Thakur, Vijay Thakur

1.5 PRODUCT CATEGORY RULES

Kiwa-Ecobility Experts, General Programme Instructions “Product Level”, SOP EE 1201_R.4.0 (18.12.2025)

Kiwa-Ecobility Experts, General Programme Instructions “Product Level” – Annex B1 Environmental Information Programme according to EN 15804 / ISO 21930, SOP EE 1203_R. 4.0 (18.12.2025)

1.6 DECLARED UNIT

The declared unit is 1 kg of the VEKA AluConnect window profile system, representing a mass-weighted average of frame, sash, and glazing bead profiles in equal linear-metre proportions.

Reference unit: 1 kg
Conversion factor: 1 linear metre of profile system = 5.171 kg

Reference unit: kilogram (kg)

1.7 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	kg
Conversion factor to 1 kg	1.000000	kg

1.8 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options, modules C1-C4 and module D EPD. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

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

The modules of the EN 15804 contain the following:

1 General information

Module A1 = Raw material supply	Module B5 = Refurbishment
Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport
Module B1 = Use	Module C3 = Waste Processing
Module B2 = Maintenance	Module C4 = Disposal
Module B3 = Repair	Module D = Benefits and loads beyond the product system boundaries
Module B4 = Replacement	

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804+A2:2019. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPD program operators may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2:2019 and ISO 14025.

2 Product

2.1 PRODUCT DESCRIPTION

This EPD declares the environmental impact of the VEKA AluConnect composite profile system as an intermediate product (semi-finished profile). The declared unit is 1 kg of profile, intended for subsequent fabrication of windows. VEKA AluConnect combines a multi-chamber rigid PVC core with structurally bonded, powder-coated aluminium exterior and interior shells. Profiles are manufactured at the VEKA AG facility in Sendenhorst, Germany. The product is classified under UN CPC code 36950 "Builders' ware of plastics n.e.c." (CPC Ver. 2.1), reflecting the predominant material character of the product (rigid PVC core; plastics-based builders' ware).

The EPD is a worst-case EPD covering system variants 600, 601, 602, and 603. These variants share a common construction depth of 82 mm and differ primarily in face width and aluminium mass content. The LCA is based on system 603, which represents the worst case with the highest aluminium content among the declared variants.

The product composition varies across variants as follows:

Material	Mass fraction [%]
Rigid PVC (S-PVC compound)	58–62
Aluminium (profiles + powder coating)	32–37
Soft PVC (sealing profiles)	4–5
Structural adhesive	~1
Total	**100**

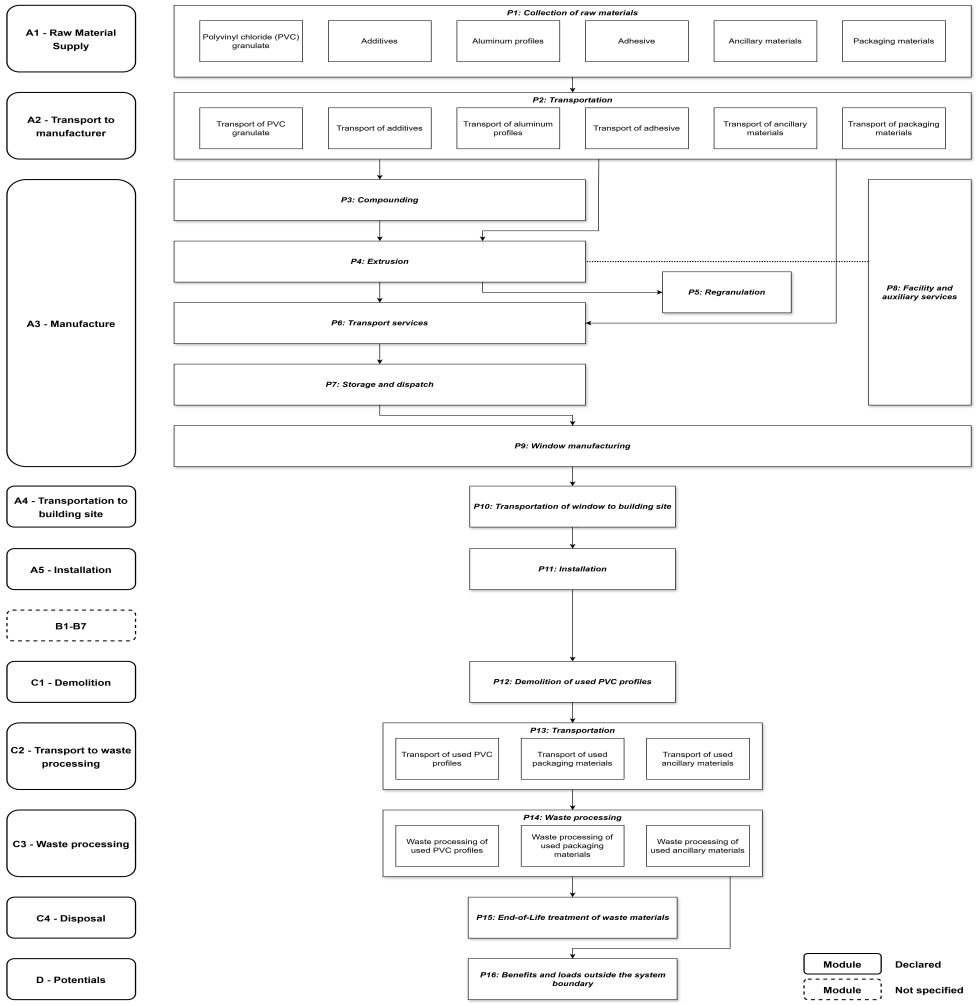
2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

AluConnect profiles are used as structural intermediate components for the fabrication of windows, balcony/French doors, lift-and-slide doors, and entrance doors, intended for residential, industrial, administrative, and educational buildings. Suitable opening configurations include turn, tilt-turn, tilt, double-vent (Stulp), single- and multi-sash, and fixed glazing, combinable as required. The declared profile system forms the structural element of an insulating window unit and provides weather protection, thermal insulation, and sound attenuation when glazed and assembled.

2.3 DESCRIPTION PRODUCTION PROCESS

AluConnect profiles are manufactured at the VEKA AG facility in Sendenhorst in a two-stage process. In the first stage, the multi-chamber rigid PVC core is produced by extrusion from a virgin S-PVC dry blend. The aluminium exterior and interior shell profiles are extruded by Hydro Extrusion Nenzing GmbH (Nenzing, Austria) from low-carbon primary billet (Hydro REDUXA) and purchased directly by VEKA. Powder coating is applied by Piesslinger GmbH (Molln, Austria) as a toll processor using TIGER Drylac and IGP powder systems; the finished powder-coated shells are delivered from Molln to the Sendenhorst site. In the second stage, the aluminium shells are structurally bonded to the PVC core using a two-component acrylate adhesive, forming the composite AluConnect profile. After curing, the profiles are cut to delivery length and packaged. Production scrap from the PVC extrusion stage is shredded on-site and reused within non-AluConnect PVC profiles produced at the facility.

2 Product



2.4 CONSTRUCTION DESCRIPTION

The installation phase (Module A5) covers the assembly of the profiles into a window unit. Due to its hybrid PVC core, the VEKA AluConnect system is welded using standard PVC machinery. Subsequently, the installation of the finished window unit on-site is performed according to standard industry guidelines (e.g., RAL quality guidelines). The element is mechanically fixed to the building structure using screws or anchors. The connection between the frame and wall is sealed (e.g., with PU foam or compressed tapes) to ensure airtightness.

Note: The environmental impact of these fixing and sealing materials is not included in this declaration and must be calculated at the building level. Packaging materials are removed and processed according to standard waste streams.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER KILOGRAM

CORE ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
GWP-total	kg CO_2 eq.	3.06E+0	9.60E-2	9.65E-1	4.12E+0	1.55E-2	2.90E-1	0.00E+0	9.11E-3	5.64E-1	5.10E-3	-4.02E+0	9.84E-1
GWP-f	kg CO_2 eq.	3.04E+0	9.56E-2	9.70E-1	4.10E+0	1.54E-2	2.82E-1	0.00E+0	9.07E-3	5.50E-1	5.09E-3	-3.94E+0	1.02E+0
GWP-b	kg CO_2 eq.	1.74E-2	3.11E-5	-5.11E-3	1.24E-2	5.03E-6	8.32E-3	0.00E+0	2.96E-6	1.37E-2	5.64E-6	-1.37E-2	2.07E-2
GWP-luluc	kg CO_2 eq.	4.07E-3	3.41E-4	2.16E-4	4.63E-3	5.50E-5	3.44E-4	0.00E+0	3.23E-5	5.11E-4	1.03E-6	-6.18E-2	-5.62E-2
ODP	kg CFC 11 eq.	7.36E-7	1.70E-9	5.08E-8	7.88E-7	2.75E-10	2.88E-8	0.00E+0	1.61E-10	2.71E-8	2.24E-11	-4.74E-7	3.71E-7
AP	mol H+ eq.	1.57E-2	4.58E-4	2.11E-3	1.83E-2	7.39E-5	9.66E-4	0.00E+0	4.34E-5	1.72E-3	8.23E-6	-2.45E-2	-3.43E-3
EP-fw	kg P eq.	9.15E-5	9.51E-7	2.60E-5	1.18E-4	1.54E-7	2.05E-5	0.00E+0	9.03E-8	1.66E-5	2.53E-8	-1.56E-4	-1.99E-7
EP-m	kg N eq.	2.38E-3	1.74E-4	4.78E-4	3.03E-3	2.81E-5	1.65E-4	0.00E+0	1.65E-5	3.66E-4	3.96E-6	-3.34E-3	2.71E-4
EP-T	mol N eq.	2.56E-2	1.86E-3	5.29E-3	3.28E-2	2.99E-4	1.87E-3	0.00E+0	1.76E-4	3.88E-3	2.89E-5	-3.63E-2	2.74E-3
POCP	kg NMVOC eq.	9.11E-3	6.33E-4	2.12E-3	1.19E-2	1.02E-4	6.24E-4	0.00E+0	6.01E-5	1.34E-3	1.08E-5	-1.41E-2	-1.01E-4
ADP-mm	kg Sb-eq.	1.71E-5	2.99E-7	3.04E-6	2.05E-5	4.83E-8	2.02E-6	0.00E+0	2.84E-8	4.58E-6	2.42E-9	2.46E-5	5.18E-5
ADP-f	MJ	4.99E+1	1.37E+0	1.53E+1	6.65E+1	2.21E-1	4.00E+0	0.00E+0	1.30E-1	5.25E+0	2.23E-2	-6.02E+1	1.60E+1
WDP	m3 world eq.	2.68E+0	7.48E-3	1.32E-1	2.82E+0	1.21E-3	1.03E-1	0.00E+0	7.10E-4	9.12E-2	8.41E-4	-1.87E+0	1.15E+0

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
PM	disease incidence	1.79E-7	9.44E-9	1.31E-8	2.01E-7	1.52E-9	8.74E-9	0.00E+0	8.96E-10	2.46E-8	1.57E-10	-2.70E-7	-3.31E-8
IR	kBq U235 eq.	1.26E-1	5.34E-4	2.26E-2	1.49E-1	8.62E-5	1.16E-2	0.00E+0	5.07E-5	2.34E-2	1.91E-5	-1.75E-1	8.84E-3

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality index (SQP)

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	5.29E+1	1.01E+0	2.17E+0	5.61E+1	1.63E-1	2.92E+0	0.00E+0	9.59E-2	1.09E+1	3.30E-1	-1.11E+1	5.95E+1
HTP-c	CTUh	9.17E-9	5.06E-11	2.93E-10	9.51E-9	8.17E-12	3.45E-10	0.00E+0	4.81E-12	3.70E-10	8.61E-13	-8.51E-9	1.73E-9
HTP-nc	CTUh	5.05E-7	1.10E-9	1.01E-8	5.16E-7	1.78E-10	1.76E-8	0.00E+0	1.04E-10	7.27E-9	1.78E-11	-6.43E-8	4.77E-7
SQP	Pt	1.07E+1	1.08E+0	1.43E+0	1.32E+1	1.74E-1	9.27E-1	0.00E+0	1.03E-1	3.02E+0	4.43E-2	-3.06E+0	1.44E+1

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality index (SQP)

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	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 disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

3 Results

ILCD classification	Indicator	Disclaimer

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 experienced with the indicator.

3.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
PERE	MJ	2.37E+1	1.94E-2	9.65E-1	2.47E+1	3.12E-3	1.22E+0	0.00E+0	1.84E-3	6.70E-1	7.08E-4	-1.58E+1	1.07E+1
PERM	MJ	9.60E-2	0.00E+0	5.61E-2	1.52E-1	0.00E+0	4.56E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.57E-1
PERT	MJ	2.37E+1	1.94E-2	1.02E+0	2.47E+1	3.12E-3	1.22E+0	0.00E+0	1.84E-3	6.70E-1	7.08E-4	-1.58E+1	1.08E+1
PENRE	MJ	3.79E+1	1.37E+0	1.39E+1	5.31E+1	2.21E-1	3.55E+0	0.00E+0	1.30E-1	5.25E+0	2.23E-2	-5.21E+1	1.02E+1
PENRM	MJ	1.21E+1	0.00E+0	1.41E+0	1.35E+1	0.00E+0	4.45E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-8.08E+0	5.85E+0
PENRT	MJ	5.00E+1	1.37E+0	1.53E+1	6.66E+1	2.21E-1	4.00E+0	0.00E+0	1.30E-1	5.25E+0	2.23E-2	-6.02E+1	1.60E+1
SM	Kg	0.00E+0	0.00E+0	2.04E-2	2.04E-2	0.00E+0	6.13E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.10E-2
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m^3	2.04E-1	3.31E-4	6.61E-3	2.11E-1	5.34E-5	7.40E-3	0.00E+0	3.14E-5	3.67E-3	2.12E-5	-8.98E-2	1.33E-1

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**=Net use of fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
HWD	Kg	1.05E-2	8.73E-6	1.08E-4	1.07E-2	1.41E-6	3.93E-4	0.00E+0	8.29E-7	2.30E-3	1.01E-7	3.00E-3	1.64E-2
NHWD	Kg	1.26E+0	9.05E-2	1.84E-1	1.53E+0	1.46E-2	7.82E-2	0.00E+0	8.59E-3	2.28E-1	7.46E-2	-9.81E-1	9.56E-1

HWD=Hazardous waste disposed | **NHWD**=Non-hazardous waste disposed | **RWD**=Radioactive waste disposed

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
RWD	Kg	1.49E-4	3.13E-7	2.77E-5	1.77E-4	5.06E-8	1.38E-5	0.00E+0	2.97E-8	1.84E-5	1.19E-8	-1.33E-4	7.61E-5

HWD=Hazardous waste disposed | **NHWD**=Non-hazardous waste disposed | **RWD**=Radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	Total
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	7.54E-2	0.00E+0	4.37E-3	7.98E-2	0.00E+0	3.11E-2	0.00E+0	0.00E+0	8.51E-1	0.00E+0	3.56E-1	1.32E+0
MER	Kg	7.68E-4	0.00E+0	4.99E-6	7.73E-4	0.00E+0	2.32E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.96E-4
EET	MJ	1.53E-3	0.00E+0	1.58E-3	3.11E-3	0.00E+0	4.63E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.88E-1	4.91E-1
EEE	MJ	8.18E-4	0.00E+0	9.14E-4	1.73E-3	0.00E+0	2.47E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.83E-1	2.85E-1

CRU=Components for re-use | **MFR**=Materials for recycling | **MER**=Materials for energy recovery | **EET**=Exported Energy, Thermic | **EEE**=Exported Energy, Electric

3 Results

3.3 INFORMATION ON BIOGENIC CARBON CONTENT PER KILOGRAM

BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per kilogram:

Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	0.001585	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of carbon dioxide uptake is taken into account. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results. One kilogram of biogenic Carbon content is equivalent to 44/12 kg of biogenic carbon dioxide uptake.

Uptake Biogenic Carbon dioxide	Amount	Unit
Packaging	0.00581	kg CO2 (biogenic)

4 Contact information

Publisher	Operator	Owner of declaration

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