

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	ASSA ABLOY / Hanchett Entry Systems, Inc.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20150131-IBA1-EN
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Access control systems – Securitron AQD6 Power Supply ASSA ABLOY / Securitron

www.bau-umwelt.com / <https://epd-online.com>



SECURITRON
ASSA ABLOY

1. General Information

<p>Hanchett Entry Systems, Inc</p> <hr/> <p>Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany</p> <hr/> <p>Declaration number EPD-ASA-20150131-IBA1-EN</p> <hr/> <p>This Declaration is based on the Product Category Rules: Electronic Access Control Systems, 11-2013 (PCR tested and approved by the independent expert committee (SVA))</p> <hr/> <p>Issue date 18.05.2015</p> <hr/> <p>Valid to 17.05.2020</p> <hr/> <p></p> <hr/> <p>Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)</p> <hr/> <p></p> <hr/> <p>Dr.-Ing. Burkhardt Lehmann (Managing Director IBU)</p>	<p>Securitron AQD6 Power Supply</p> <hr/> <p>Owner of the Declaration Hanchett Entry Systems, Inc 10027 S 51st Street, Suite 102 Phoenix, AZ 85044</p> <hr/> <p>Declared product / Declared unit This Declaration represents 1 model AQD6 Power Supply, with enclosure.</p> <hr/> <p>Scope: The Life Cycle Assessment is based on data collected from the Hanchett Entry Systems Inc. The Securitron AQD6 Power Supply is assembled in USA. The electronic components, including PCB are produced in China. The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.</p> <hr/> <p>Verification</p> <p>The CEN Standard EN 15804 serves as the core PCR</p> <p>Independent verification of the declaration and data according to ISO 14025</p> <p><input type="checkbox"/> internally <input checked="" type="checkbox"/> externally</p> <hr/> <p></p> <hr/> <p>Dr. Wolfram Trinius (Independent verifier appointed by SVA)</p>
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2. Product

2.1 Product description

Product name: Securitron AQD6 Power Supply

Product characteristics: 6 Amp Dual Voltage Power Supply

- Converts 115VAC or 240VAC into 12 or 24VDC with over 90% efficiency
- Metal Enclosure protects from tamper and accidental contact
- UL Listed.

2.2 Application

The AQD6 is suitable for all 12 or 24VDC powered access control devices including card readers, locks, access control panels, and security cameras installed in almost any facility.

2.3 Technical Data

The table presents the technical properties of Securitron AQD6 Power Supply:

Technical data

Name	Value	Unit
Input Voltage	115/230	VAC
Output Voltage	12/24	VDC

Name	Value	Unit
Output Current	6	A
Battery Charge Current	0.7	A

2.4 Placing on the market / Application rules

Compliance with US and Canadian Directives

- UL294 6th Edition Listed
- UL 603 Listed
- ULC S318 Listed
- UL1481 Listed
- RoHS Compliant

2.5 Delivery status

Each power supply is individually packaged in a cardboard box sized 14" x 14" x 4.75".

2.6 Base materials / Ancillary materials

The average composition of the Securitron AQD6 power supply is as following:

Component	Percentage in mass (%)
Copper	0.12
Plastics	0.01
Steel	86.81
Electronic	13.05

Component	Percentage in mass (%)
Others	0.01
Total	100.0

2.7 Manufacture

The Securitron AQD6 Power Supply is assembled in USA. The electronic components, including PCB are produced in China.

2.8 Environment and health during manufacturing

The Management system of Lifesafety power is ISO 9001 and ISO 14001.

2.9 Product processing/Installation

AQD6 Power Supply is installed by trained product integrators or by the product end user. Installation instructions are included with each reader unit.

2.10 Packaging

The Power supply is packaged in cardboard.

Material	Value (%)
Cardboard/ Paper	100.0
Total	100.0

2.11 Condition of use

No auxiliary or consumable materials are incurred for maintenance and usage of the power supply. Repairs or replacement are not usually necessary. No cleaning efforts need to be taken into consideration.

2.12 Environment and health during use

There are no interactions between products, the environment and health.

2.13 Reference service life

The service life of the AQD6 is estimated to be 10 years.

2.14 Extraordinary effects

Fire

No danger to the environment can be anticipated during exposure to fire.

Water

No substances are used which have a negative impact on ecological water quality on contact by the device with water.

Mechanical destruction

No danger to the environment can be anticipated during mechanical destruction.

2.15 Re-use phase

During the reference service life the power supply can be disconnected and dismantled then remounted and attached elsewhere. The packaging and enclosure are recyclable. The Circuit boards are directed to an appropriate recycling center to prevent introduction to the solid waste cycle.

2.16 Disposal

The product can be mechanically dissembled to separate the different materials. 99.99% of the materials used are recyclable. The rest is disposed as a construction waste for landfill.

2.17 Further information

Securitron
10027 S 51st Street, Suite 102
Phoenix, AZ 85044
Tel: 800-624-5625
www.securitron.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of AQD6 Power Supply as specified in Part B requirements on the EPD for Electronic Access Control Systems /IBU PCR Part B/.

Declared unit

Name	Value	Unit
Declared unit	1	piece of AQD6 Power Supply
Mass (without packaging)	4.965	kg
Conversion factor to 1 kg	0.2014	-

3.2 System boundary

Type of the EPD: cradle to gate - with options
The following life cycle phases were considered for Reader:

A1-A3 Production stage:

- A1 – Raw material extraction and processing
- A2 – Transport to the manufacturer and
- A3 – Manufacturing.

Construction stage:

- A4 - Transport from the gate to the site

- A5 – Packaging waste processing

Use stage related to the operation of the building includes:

- B6 – Operational energy use (Energy consumption for lock operation)

End-of-life stage:

- C2 – Transport to waste processing,
- C3 – Waste processing for recycling and
- C4 – Disposal (landfill).

These information modules include provision and transport of all materials, products, as well as energy and water provisions, waste processing up to the end-of-waste state or disposal of final residues.

Module D:

- Declaration of all benefits or recycling potential from EoL and A5

3.3 Estimates and assumptions

Use phase:

For the use phase, it is assumed that the power supply is used in the United States of America, thus an US electricity grid mix is considered within this stage.

EoL:

In the End-of-Life phase, for all the materials which can be recycled, a recycling scenario with 100% collection rate was assumed.

3.4 Cut-off criteria

In the assessment, all available data from the production process are considered, i.e. all raw materials used, auxiliary materials (e.g. lubricants), thermal energy consumption and electric power consumption - including material and energy flows contributing less than 1% of mass or energy (if available). In case a specific flow contributing less than 1% in mass or energy is not available, worst case assumption proxies are selected to represent the respective environmental impacts.

Impacts relating to the production of machines and facilities required during production are out of the scope of this assessment.

3.5 Background data

For life cycle modeling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by PE INTERNATIONAL AG, is used /GaBi 6 2013/. The GaBi-database contains consistent and documented datasets which are documented in the online GaBi-documentation /GaBi 6 2013D/. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation and auxiliary materials.

3.6 Data quality

The requirements for data quality and background data correspond to the specifications of the /IBU PCR PART A/. PE INTERNATIONAL performed a variety of tests and validations during the commission of the present study

in order to ensure its quality of the present document and results. This obviously includes an extensive review of project-specific LCA models as well as the background data used.

The technological background of the collected data reflects the physical reality of the declared products. The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs.

All relevant background datasets are taken from the GaBi 6 software database. The last revision of the used background data has taken place not longer than 10 years ago.

3.7 Period under review

The period under review is 2013/14 (12 month average).

3.8 Allocation

Regarding incineration, the software model for the waste incineration plant (WIP) is adapted according to the material composition and heating value of the combusted material. Following specific life cycle inventories for the WIP are considered:

- Waste incineration of plastic
- Waste incineration of paper
- Waste incineration of electronic scrap

Regarding the recycling material of metals, the metal parts in the EoL are declared as end-of-waste status. Thus, these materials are considered in module D. Specific information on allocation within the background data is given in the GaBi dataset documentation.

3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

4. LCA: Scenarios and additional technical information

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site Packaging (paper and plastic)	0.0544	kg

Reference service life

Name	Value	Unit
Reference service life	10	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption	7708.8	kWh
Days per year in use	365	Days
Hours per day in different modes	24	h
Power consumption on mode	144	W
Power consumption stand-by mode	60	W

End of life (C1-C4)

Name	Value	Unit
Collected separately Copper, Plastic Parts, Steel, Electronic	4.9650	kg
Collected as mixed construction	0.0005	kg

Name	Value	Unit
waste construction waste for landfilling		
Recycling Copper	0.0058	kg
Reuse plastic	0.0005	kg
Recycling Steel	4.3107	kg
Recycling Electronic	0.648	kg
Landfilling construction waste for landfill	0.0005	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Collected separately waste Card reader (including packaging)	5.0199	kg
Recycling Copper	0.12	%
Reuse Plastic Parts	0.01	%
Recycling Steel	85.87	%
Recycling Electronic	12.91	%
Reuse Paper Packaging	1.08	%
Loss Construction waste for landfilling (no recycling potential)	0.01	%

5. LCA: Results

Results shown below were calculated using CML 2000 – Apr. 2013 Methodology.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE		CONSTRUCTION PROCESS STAGE			USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement ¹⁾	Refurbishment ¹⁾	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	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of Securitron AQD6 Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO ₂ -Eq.]	8.03E+01	2.86E-01	7.71E-02	5.18E+03	4.77E-03	1.05E-01	2.69E-01	-1.31E+01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.27E-08	1.37E-12	3.53E-13	1.79E-06	2.29E-14	7.18E-11	7.43E-13	-1.41E-10
AP	Acidification potential of land and water	[kg SO ₂ -Eq.]	4.63E-01	1.31E-03	1.76E-05	1.75E+01	2.19E-05	4.95E-04	1.28E-04	-1.04E-01
EP	Eutrophication potential	[kg (PO ₄) ³⁻ -Eq.]	3.53E-02	2.99E-04	3.07E-06	9.35E-01	4.99E-06	2.79E-05	3.07E-05	-5.88E-03
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	3.20E-02	-4.23E-04	1.25E-06	1.07E+00	-7.05E-06	2.94E-05	9.70E-06	-7.93E-03
ADPE	Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	5.01E-03	1.08E-08	1.39E-09	6.84E-04	1.80E-10	1.45E-08	8.34E-08	-4.73E-03
ADPF	Abiotic depletion potential for fossil resources	[MJ]	9.45E+02	3.95E+00	2.16E-02	5.97E+04	6.59E-02	1.19E+00	2.14E-01	-1.29E+02

RESULTS OF THE LCA - RESOURCE USE: One piece of Securitron AQD6 Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	6.93E+01	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	6.93E+01	1.56E-01	2.01E-03	5.85E+03	2.60E-03	3.41E-01	2.88E-02	-2.06E+00
PENRE	Non renewable primary energy as energy carrier	[MJ]	1.10E+03	-	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	1.10E+03	3.97E+00	2.53E-02	7.56E+04	6.61E-02	1.87E+00	2.56E-01	-1.27E+02
SM	Use of secondary material	[kg]	4.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m ³]	3.44E-01	1.10E-04	2.24E-04	2.66E+01	1.83E-06	8.43E-04	1.40E-03	-3.70E-02

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of Securitron AQD6 Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	5.71E-02	9.03E-06	1.74E-06	5.89E-02	1.51E-07	2.59E-04	4.47E-05	4.00E-03
NHWD	Non hazardous waste disposed	[kg]	1.48E+00	4.99E-04	1.94E-03	2.41E+01	8.31E-06	6.03E-04	5.79E-02	-4.97E-01
RWD	Radioactive waste disposed	[kg]	5.99E-02	5.19E-06	1.48E-06	6.22E+00	8.65E-08	2.69E-04	1.69E-05	6.48E-04
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	5.44E-02	0.00E+00	0.00E+00	4.31E+00	0.00E+00	-
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.75E-02	0.00E+00	0.00E+00	0.00E+00	4.34E-03	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.75E-01	0.00E+00	0.00E+00	0.00E+00	1.19E-02	-

6. LCA: Interpretation

This chapter contains an interpretation of the Life Cycle Impact Assessment categories. Stated percentages in the whole interpretation are related to the overall life cycle, excluding credits (module D).

The production phase (modules A1-A3) contributes between 1% and 3% to the overall results for all the environmental impact assessment categories hereby considered, except for the abiotic depletion potential (ADPE). For this, the contribution from the production phase accounts for app. 88% - this impact category describes the reduction of the global amount of non-renewable raw materials; therefore, as expected, it is mainly related with the extraction of raw materials (A1).

Within the production phase, the main contribution for all the impact categories is the production of electronic components and steel, with app. 98%, mainly due to the energy consumption on this process. Steel accounts with app. 87% to the overall mass of the

product, therefore, the impacts are in line with the mass composition of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

To reflect the use phase (module B6), the energy consumption was included and it has a major contribution for all the impact assessment categories considered - between 96% and 99%, with the exception of ADPE (12%). This is a result of 24 hours of operation in different modes per day and per 365 days in a year.

In the end-of-life phase, there are loads and benefits (module D, negative values) considered. The benefits are considered beyond the system boundaries and are declared for the recycling potential of the metals and for the credits from the incineration process (energy substitution).

7. Requisite evidence

Not applicable in this EPD.

8. References

Institut Bauen und Umwelt

Institut Bauen und Umwelt e.V., Berlin (pub.):
Generation of Environmental Product Declarations (EPDs);

General principles

for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2013-04
www.bau-umwelt.de

IBU PCR Part A

IBU PCR Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. Institut Bauen und Umwelt e.V., Berlin (pub.). April 2013. www.bau-umwelt.de

IBU PCR Part B

IBU PCR Part B: Requirements on the EPD for Electronic Access Control Systems. Institut Bauen und Umwelt e.V., Berlin (pub.). www.bau-umwelt.com

ISO 14001

ISO 14001:2009-11: Environmental management systems - Requirements with guidance for use

ISO 14025

ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 9001

ISO 9001:2008: Quality management systems - Requirements

EN 15804

EN 15804: 2012+A1:2014: Sustainability of construction works — Environmental Product

Declarations — Core rules for the product category of construction products

GaBi 6 2013

GaBi 6 2013: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Leinfelden-Echterdingen, 1992-2013.

GaBi 6 2013D

GaBi 6 2013D: Documentation of GaBi 6: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Leinfelden-Echterdingen, 1992-2013. <http://documentation.gabi-software.com/>

RoHS Conformity:

RoHS Conformity: EN50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

ULC S318

ULC S318: Standard for Power Supplies for Burglar Alarm Systems

UL 294

UL 294 6th Edition: Access control system units

UL 603

UL 603: Power supplies for use with burglar-alarm systems

UL1418

UL1418: Implosion-protected cathode-ray tubes for television-type appliances

9. Annex

Results shown below were calculated using TRACI Methodology.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement ⁽¹⁾	Refurbishment ⁽¹⁾	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	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of Securitron AQD6 Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO ₂ -Eq.]	8.03E+01	2.86E-01	7.71E-02	5.18E+03	4.77E-03	1.05E-01	2.69E-01	-1.31E+01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.42E-08	1.46E-12	3.75E-13	1.91E-06	2.43E-14	7.64E-11	7.90E-13	-2.78E-10
AP	Acidification potential of land and water	[kg SO ₂ -Eq.]	4.70E-01	1.71E-03	2.13E-05	1.63E+01	2.86E-05	4.68E-04	1.64E-04	-9.92E-02
EP	Eutrophication potential	[kg N-eq.]	3.08E-02	1.21E-04	1.23E-06	8.03E-01	2.02E-06	1.99E-05	1.35E-05	-3.40E-03
Smog	Ground-level smog formation potential	[kg O ₃ -eq.]	5.69E+00	3.53E-02	4.97E-04	1.39E+02	5.88E-04	4.24E-03	5.26E-03	-1.06E+00
Resources		[MJ]	7.53E+01	5.69E-01	2.53E-03	3.52E+03	9.48E-03	8.49E-02	2.06E-02	-2.36E+00

RESULTS OF THE LCA - RESOURCE USE: One piece of Securitron AQD6 Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	6.93E+01	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	6.93E+01	1.56E-01	2.01E-03	5.85E+03	2.60E-03	3.41E-01	2.88E-02	-2.06E+00
PENRE	Non renewable primary energy as energy carrier	[MJ]	1.10E+03	-	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	1.10E+03	3.97E+00	2.53E-02	7.56E+04	6.61E-02	1.87E+00	2.56E-01	-1.27E+02
SM	Use of secondary material	[kg]	4.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m ³]	3.44E-01	1.10E-04	2.24E-04	2.66E+01	1.83E-06	8.43E-04	1.40E-03	-3.70E-02

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of Securitron AQD6 Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	5.71E-02	9.03E-06	1.74E-06	5.89E-02	1.51E-07	2.59E-04	4.47E-05	4.00E-03
NHWD	Non hazardous waste disposed	[kg]	1.48E+00	4.99E-04	1.94E-03	2.41E+01	8.31E-06	6.03E-04	5.79E-02	-4.97E-01
RWD	Radioactive waste disposed	[kg]	5.99E-02	5.19E-06	1.48E-06	6.22E+00	8.65E-08	2.69E-04	1.69E-05	6.48E-04
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	5.44E-02	0.00E+00	0.00E+00	4.31E+00	0.00E+00	-
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.75E-02	0.00E+00	0.00E+00	0.00E+00	4.34E-03	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.75E-01	0.00E+00	0.00E+00	0.00E+00	1.19E-02	-

**Publisher**

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