

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804




Owner of the Declaration	ASSA ABLOY AB.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
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Valid to	23.05.2021

Access Control Systems – CLIQ Mobile Programming Device **ASSA ABLOY AB**

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



1. General Information

<p>ASSA ABLOY AB</p> <hr/> <p>Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany</p> <hr/> <p>Declaration number EPD-ASA-20160105-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 (SVR))</p> <hr/> <p>Issue date 24.05.2016</p> <hr/> <p>Valid to 23.05.2021</p> <hr/> <p> Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)</p> <hr/> <p> Dr.-Ing. Burkhard Lehmann (Managing Director IBU)</p>	<p>CLIQ Mobile PD</p> <hr/> <p>Owner of the Declaration ASSA ABLOY AB Förmansvägen 11 117 43 Stockholm Sweden</p> <hr/> <p>Declared product / Declared unit This Declaration represents one ASSA ABLOY CLIQ Mobile Programming Device (PD), including all custom configurations.</p> <hr/> <p>Scope: The Life Cycle Assessment is based on data collected from the Integrated Micro-Electronics Inc. production facility in Laguna Binan, Philippines. 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 The CEN Standard EN 15804 serves as the core PCR 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> Dr. Wolfram Finius (Independent tester appointed by SVR)</p>
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2. Product

2.1 Product description

The CLIQ Mobile PD, produced by ASSA ABLOY AB, is used for programming CLIQ keys using a mobile device, i.e. a smart phone via Bluetooth, or a laptop via USB, to connect to a remote CLIQ server over the internet or other network. A CLIQ remote system allows administrators the ability to manage CLIQ keys and cylinders from anywhere with internet access. CLIQ keys can then be updated and/or reauthorized with timely expirations for enhanced security while retrieving audit data simultaneously remotely with this Mobile PD.

The programming device can be configured to support several different CLIQ key types.

2.2 Application

The CLIQ Mobile PD is a handheld device for in- and outdoor use especially in the utility segment e.g. telecom, energy, transport etc. meaning systems that are geographically widely spread, and where the employees do not have a permanent workplace.

2.3 Technical Data

The table presents the technical properties of CLIQ Mobile PD:

Technical data

Name	Value	Unit
Mounting	Handheld	-
Power supply	Standard 4*AAA Cells in serial	VDC
Operating Temperature	-40 – 80	°C
Operating Humidity	10 – 95	% (non-condensing)
Power consumption (battery driven)	0.5	W

2.4 Placing on the market / Application rules

The following directives apply:

- EMC Directive 2004/108/EC
- LVD Directive 2006/95/EC
- R&TTE Directive 1999/5/EC
- ROHS Directive 2011/65/EU

Conformity is established through tests performed against a set of standards at a certified body testing laboratory:

- EN 301 489-17 V2.2.1 Electro Magnetic Compatibility (EMC) and Radio spectrum Matters (ERM)
- EN 301 489-1 V1.9.2 Electro Magnetic Compatibility (EMC) and Radio spectrum Matters (ERM)
- EN 300 328 V1.8.1 Electromagnetic compatibility (EMC) and Radio spectrum Matters (ERM)
- EN 61000-4-3: Radiated RF
- FCC Part 15(2011) Radiated electromagnetic field in the frequency range 30 MHz to 1000 MHz (FCC ID: PVH0946 of BT-module)
- RSS210 Issue 8: Licence-exempt Radio Apparatus (IC 5325A-0946 of BT-module)
- FCC Part 15(2010): Radio frequency device. subpart B: Unintentional radiators. Class B equipment.
- ICES-003 Issue 4: Digital Apparatus; Class B
- IEC 60950-1:2005 + A1:2009 + A2:2013 Information technology equipment - Safety
- EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 Information technology equipment - Safety
- EN 62479:2010 Low power electronic - Safety, human exposure to electromagnetic fields.

RoHS Conformity:

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

2.5 Delivery status

Each programming device is delivered individually packaged. Package dimensions: 16.5 cm x 10.5 cm x 4.5 cm.

2.6 Base materials / Ancillary materials

The average composition of CLIQ Mobile PD is as following:

Component	Percentage in mass (%)
Plastics	39.13
Zinc	19.88
Electronics	17.38
Brass	14.91
Steel	4.35
Electro-mechanics	4.35
Total	100.0

2.7 Manufacture

The CLIQ Mobile PD is assembled at the production facility at Integrated Micro-Electronics, Inc (IMI) in the Philippines. The injection-moulded parts are purchased from Plastep Oy, Finland. The electronic components, including PCB, are purchased externally and assembled at IMI. The assembled programming device is then packaged for shipment.

2.8 Environment and health during manufacturing

The Management System of Integrated Micro-Electronics, Inc. has assessed and certified as meeting the requirements of ISO 14001:2004 as well as

QC080000 (Hazardous Substance Process Management (HSPM)).

2.9 Product processing / Installation

The CLIQ Mobile PD is not installed, it is setup or more precisely configured.

2.10 Packaging

The programming device is packed in a cardboard box to avoid damage. Packaging materials shall be collected separately for recycling.

Material	Value (%)
Cardboard/ Paper	100.0
Total	100.0

Packaging components incurred during installation are directed to energy recovery circuits. EWC/ 15 01 01 Paper and cardboard packaging.

2.11 Condition of use

No auxiliary or consumable materials are incurred for maintenance and usage of the programming device. Cleaning is not required.

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 CLIQ Mobile PD is estimated to be 10 years. This number is based on the most conservative Mean Time Between Failure (MTBF) data available for the programming device components at elevated operation temperatures.

2.14 Extraordinary effects

Fire

The external housing of the Mobile PD is constructed from polycarbonate resin thermoplastic. The housing material, and thus the programming device as a whole unit, has been classified as having a UL94 V0 Flame Rating. A UL94 Flame Rating of V0 specifies; burning stops within 10 seconds on a vertical specimen; drips of particles allowed as long as they are not inflamed.

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 stage

The following possibilities arise with reference to the material composition of the programming device.

Re-use

During the reference service life the programming device can be disconnected and setup for a new user.

Material Recycling

EU Recycling:

ASSA ABLOY distributors act as the importer of the equipment into their member state. Thus, the distributor has the legal responsibility to:

- Register as the WEEE producer in their member state.
- Finance arrangements for collection and recycling of WEEE arising from ASSA ABLOY products that the distributor sells in their member state.

For specific information, your local distributor should be contacted.

For all other regions ASSA ABLOY distributors act as the importer of the equipment and provides arrangements for the collection, treatment, recycling and recovery of the programming device.

Waste codes according to European Waste Catalogue and Hazardous Waste List - Valid from 1 January 2002.

- /EWC/ 16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12
- /EWC/ 16 02 14 Discarded equipment other than those mentioned in 16 02 09 to 16 02 13.

- /EWC/ 16 02 16 Components removed from discarded equipment other than those mentioned in 16 02 15
- /EWC/ 17 02 03 plastic
- /EWC/ 17 04 05 iron and steel
- /EWC/ 17 04 11 Cables with the exception of those outlined in 17 04 10
- Disposal of the product is subject to the WEEE Directive within Europe, Directive 2012/19/EU.

2.16 Disposal

No disposal is foreseen for the product nor for the corresponding packaging.

2.17 Further information

More information on ASSA ABLOY CLIQ Mobile PD is available at:

ASSA ABLOY AB
Förmansvägen 11
SE-117 43 Stockholm
Sweden
Tel: +46-8-506 485 00
Internet: www.assaabloy.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of CLIQ Mobile Programming Device 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 CLIQ Mobile PD
Mass (without packaging)	0.161	kg
Conversion factor to 1 kg	4.21	-

3.2 System boundary

Type of the EPD: cradle to gate - with options
The following life cycle stages were considered for programming device:

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

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

EoL:

In the End-of-Life stage, 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 modelling of the considered products, the GaBi ts Software System for Life Cycle Engineering, developed by thinkstep AG, is used /GaBi ts 2016/. 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/.

thinkstep AG performed a variety of tests and checks during the entire project to ensure high quality of the completed project. 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 its 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 2015 (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 scraps (PWB)

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

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

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

Transport to the building site (A4)

Name	Value	Unit
Truck transport		
Litres of fuel diesel with maximum load (27 t payload)	39.4	l/100 km
Transport distance truck	500	km
Capacity utilization (incl. empty runs) of truck	85	%
Air transport		
Payload	113	t
Transport distance cargo plane	10000	km
Capacity utilization volume factor	66	%

Installation into the building (A5)

For the life cycle module A5 only packaging waste processing was considered:

Name	Value	Unit
Output substances following waste treatment on site Packaging (paper)	0.04	kg

Reference service life

Name	Value	Unit
Reference service life	10	a

End of life (C2-C4)

Name	Value	Unit
Collected separately steel, brass, zinc, electronic, electro mechanics, plastic parts	0.16	kg
Collected as mixed construction waste construction waste for landfilling	0.00	kg

Reuse plastic	0.06	kg
Recycling steel, brass, zinc, electronic, electro mechanics	0.10	kg
Landfilling construction waste for landfill	0.00	kg

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

Name	Value	Unit
Collected separately waste type	0.201	kg
Recycling Steel	3.48	%
Recycling Brass	11.94	%
Recycling Zinc	15.92	%
Recycling Electronic	13.93	%
Recycling Electro-mechanics	3.48	%
Reuse Plastic parts	31.34	%
Reuse packaging (paper) (from Module A5)	19.91	%

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	MND	MND	MND	X	X	X	X	

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of CLIQ Mobile PD

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
GWP	Global warming potential	[kg CO ₂ -Eq.]	1.03E+01	1.06E+00	5.66E-02	4.78E-04	4.62E-03	1.65E-01	-1.96E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.59E-09	6.58E-13	2.59E-13	2.29E-15	3.16E-12	4.97E-13	-1.17E-10
AP	Acidification potential of land and water	[kg SO ₂ -Eq.]	6.39E-02	3.26E-03	1.29E-05	2.19E-06	2.18E-05	4.44E-05	-2.08E-02
EP	Eutrophication potential	[kg (PO ₄) ³⁻ -Eq.]	5.20E-03	6.39E-04	2.25E-06	5.00E-07	1.23E-06	4.02E-06	-1.24E-03
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	4.25E-03	2.96E-04	9.16E-07	-7.05E-07	1.30E-06	2.28E-06	-1.09E-03
ADPE	Abiotic depletion potential for non-fossil resources	[kg Sb Eq.]	1.26E-03	3.62E-08	1.02E-09	1.80E-11	6.40E-10	1.29E-08	-1.59E-03
ADPF	Abiotic depletion potential for fossil resources	[MJ]	1.30E+02	1.48E+01	1.59E-02	6.59E-03	5.25E-02	7.40E-02	-2.07E+01

RESULTS OF THE LCA - RESOURCE USE: One piece of CLIQ Mobile PD

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	8.69E+00	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	8.69E+00	2.88E-02	1.48E-03	2.60E-04	1.50E-02	5.82E-03	-1.33E+00
PENRE	Non-renewable primary energy as energy carrier	[MJ]	1.47E+02	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	1.47E+02	1.48E+01	1.86E-02	6.62E-03	8.23E-02	8.27E-02	-2.22E+01
SM	Use of secondary material	[kg]	3.59E-02	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
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
FW	Use of net fresh water	[m ³]	4.93E-02	1.17E-04	1.65E-04	1.83E-07	3.71E-05	4.22E-04	-1.33E-02

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of CLIQ Mobile PD

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	6.41E-03	2.95E-05	1.28E-06	1.51E-08	1.14E-05	6.55E-06	-4.41E-04
NHWD	Non-hazardous waste disposed	[kg]	1.62E-01	6.77E-05	1.42E-03	8.32E-07	2.66E-05	2.24E-02	-1.17E-02
RWD	Radioactive waste disposed	[kg]	6.59E-03	1.38E-05	1.09E-06	8.66E-09	1.19E-05	3.47E-06	-6.00E-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	4.00E-02	0.00E+00	6.30E-02	0.00E+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	7.17E-02	0.00E+00	0.00E+00	3.01E-01	0.00E+00
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.02E-01	0.00E+00	0.00E+00	8.26E-01	0.00E+00

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 stage (modules A1-A3) contributes between 98% and 100% to the overall results for all the environmental impact assessment categories hereby considered. Within the production stage, the main contribution for all the impact categories is the production of electronics with approx. 93%, mainly due to the energy consumption on this process. Electronics

account with approx. 22% to the overall mass of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

In the end-of-life stage, 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

PCR Part A

Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. April 2013
www.bau-umwelt.de

IBU PCR Part B

IBU PCR Part B: PCR Guidance-Texts for Building-Related Products and Services. From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU). Part B: Requirements on the EPD for Electronic Access Control Systems. November 2013.
www.bau-umwelt.com

EN 15804

EN 15804:2012-04: 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, PE INTERNATIONAL AG, 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, PE INTERNATIONAL AG, Leinfelden-Echterdingen, 1992-2013.

<http://documentation.gabi-software.com/>

ISO 14025

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

EMC Directive 2004/108/EC

Electro Magnetic Compatibility Directive

LVD Directive 2006/95/EC

Low Voltage Directive

RoHS Directive 2011/65/EU

Restriction of the use of certain hazardous substances Directive

R&TTE Directive 1999/5/EC

Radio and Telecommunication Terminal Equipment (R&TTE) Directive

EN 301 489-17 V2.2.1

ElectroMagnetic Compatibility (EMC) and Radio spectrum Matters (ERM)

EN 301 489-1 V1.9.2

ElectroMagnetic Compatibility (EMC) and Radio spectrum Matters (ERM)

EN 300 328 V1.8.1

ElectroMagnetic Compatibility (EMC) and Radio spectrum Matters (ERM)

EN 61000-4-3

Radiated RF

FCC Part 15(2011)

Radiated electromagnetic field in the frequency range 30 MHz to 1000 MHz

RSS210 Issue 8

Licence-exempt Radio Apparatus

ICES-003

Canadian - Interference-Causing Equipment Standard

EN 62479:2010

Assessment of the compliance of low power electronic with the basic restrictions related to human exposure to electromagnetic fields

IEC 60950-1:2005+A1+A2

Information technology equipment - Safety -- Part 1:
General requirements, Amendment 1 (International)

EN 60950-1: 2006+A11+A1+A12+A2

Information technology equipment - Safety (CENELEC
countries)

UL 94 V0

Standard for Safety of Flammability of Plastic Materials

QC080000

Hazardous Substance Process Management (HSPM)

EWC

European Waste Catalog

ISO 14001:2004

Environmental management systems - Requirements
with guidance for use (ISO 14001:2004 + Cor. 1:2009)

WEEE

Waste Electrical and Electronic Equipment Directive
(WEEE Directive), 2012/19/EU

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	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of CLIQ Mobile PD

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
GWP	Global warming potential	[kg CO ₂ -Eq.]	1.03E+01	1.06E+00	5.66E-02	4.78E-04	4.62E-03	1.65E-01	-1.96E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.71E-09	6.99E-13	2.76E-13	2.43E-15	3.36E-12	5.28E-13	-1.71E-10
AP	Acidification potential of land and water	[kg SO ₂ -Eq.]	6.44E-02	4.08E-03	1.56E-05	2.86E-06	2.06E-05	5.24E-05	-2.00E-02
EP	Eutrophication potential	[kg N-eq.]	4.36E-03	2.20E-04	9.02E-07	2.02E-07	8.78E-07	1.88E-06	-5.31E-04
Smog	Ground-level smog formation potential	[kg O ₃ -eq.]	8.69E-01	1.19E-01	3.65E-04	5.88E-05	1.87E-04	5.37E-04	-2.28E-01
Resources	Resources – resources fossil	[MJ]	1.14E+01	2.12E+00	1.86E-03	9.49E-04	3.74E-03	7.60E-03	-9.68E-01

RESULTS OF THE LCA - RESOURCE USE: One piece of CLIQ Mobile PD

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	8.69E+00	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	8.69E+00	2.88E-02	1.48E-03	2.60E-04	1.50E-02	5.82E-03	-1.33E+00
PENRE	Non-renewable primary energy as energy carrier	[MJ]	1.47E+02	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	1.47E+02	1.48E+01	1.86E-02	6.62E-03	8.23E-02	8E-02	-2.22E+01
SM	Use of secondary material	[kg]	3.59E-02	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
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
FW	Use of net fresh water	[m ³]	4.93E-02	1.17E-04	1.65E-04	1.83E-07	3.71E-05	4.22E-04	-1.33E-02

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of CLIQ Mobile PD

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	6.41E-03	2.95E-05	1.28E-06	1.51E-08	1.14E-05	6.55E-06	-4.41E-04
NHWD	Non-hazardous waste disposed	[kg]	1.62E-01	6.77E-05	1.42E-03	8.32E-07	2.66E-05	2.24E-02	-1.17E-02
RWD	Radioactive waste disposed	[kg]	6.59E-03	1.38E-05	1.09E-06	8.66E-09	1.19E-05	3.47E-06	-6.00E-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	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	4.00E-02	0.00E+00	6.30E-02	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	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	7.17E-02	0.00E+00	0.00E+00	3.01E-01	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.02E-01	0.00E+00	0.00E+00	8.26E-01	-

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