ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration Assa Abloy Aube Anjou SA

Programme holder Institut Bauen und Umwelt e.V. (IBU)

Publisher Institut Bauen und Umwelt e.V. (IBU)

Declaration number EPD-ASA-20150168-IBA1-EN

Issue date 10.06.2015

Valid to 09.06.202

Hinges and Handles – Muze door handle set Assa Abloy Aube Anjou SA



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1. General Information

Assa Abloy Aube Anjou SA

Programme holder

IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1

10178 Berlin

Germany

Declaration number

EPD-ASA-20150168-IBA1-EN

This Declaration is based on the Product Category Rules:

IBU: PCR Locks and fittings , 07.2014 (PCR tested and approved by the independent expert committee (SVA))

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Issue date

10.06.2015

Valid to

09.06.2020

Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)

Dr.-Ing. Burkhart Lehmann (Managing Director IBU)

Muze door handle set

Owner of the Declaration

Assa Abloy Aube Anjou SA 21 Rue Michel Couet 49160 Longue France

Declared product / Declared unit

The declaration represents 1 door handle set – Muze door handle - consisting of the following items:

- · 2 handles mounted on backplate
- 1 plastic bag including 1 spindle and 2 screws

Scope:

This declaration and its LCA study are relevant to the Muze door handle sets manufactured in Assa Abloy Aube Anjou SA (ANJOU PLANT). 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.

Verification

The CEN Standard EN 15804 serves as the core PCR
Independent verification of the declaration
according to ISO 14025

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2. Product

2.1 Product description

Product name: Muze door handle set **Product characteristic:**

- Muze door handle set consist of two handles and two plates made of chromed zinc.
- Handles are assembled on backplate with a patented nylon bush.
- Handles are free to rotate 360 until mounting
- The set includes accessories for installation on 38-48 mm doors (M4 screws + 7mm spindle)
- Indoor backplate includes two countersunk drilled holes
- Outdoor backplate includes two tapped pillars

2.2 Application

Muze door handles consist of a whole range of door handles offered in various finishing to equip various kind of internal residential doors.

2.3 Technical Data

The table presents the technical properties of Muze door handle set:

Technical data

Parameter	Value
Available Finishes:	Satin Chrome, Dark Chrome, Brushed Nickel
Available Sizes:	195 mm and
	165 mm c-c
Width:	40 mm
Height:	220 mm

2.4 Placing on the market / Application rules

Since there is no harmonization legislation of the European Union, a CE-marking for placing the products on the market is not possible. Applicable standard for the production of the Muze door handles is /EN 1906: 2012/.

2.5 Delivery status

Muze door handle sets are delivered packed by 10 sets in a box size - 220 mm x 386 mm x 220 mm



2.6 Base materials / Auxiliary materials

The average composition for Muze door handle sets is as following:

Component	Percentage in mass (%)
Zinc	92.70
Steel	6.22
Plastic	1.04
Others	0.04
Total	100.0

2.7 Manufacture

The manufacturing processes occur at in factory Assa Abloy Aube Anjou SA, 21 Rue Michel Couet 49160 LONGUE (France):

- 1) Zinc die casting for plates and handles
- 2) Emerying and polishing of plates and handles
- 3) Plastic injection of nylon bearing
- 4) Chrome plating for plates and handles
- 5) Machining of spindle and packaging with screws
- 6) Robotized assembly and packaging of the complete sets

The factory of Assa Abloy Aube Anjou SA, 21 Rue Michel Couet, 49160 LONGUE (France) has a certification of Quality Management system in accordance with /ISO 9001:2008/

Location of suppliers:

Zinc: Belgium

Plastic granulate: France

Screws: France Steel profile: France

2.8 Environment and health during manufacturing

ASSA ABLOY is committed to producing and distributing door opening solutions with minimal environmental impact, where health & safety is the primary focus for all employees and associates.

- Environmental operations, GHG, energy, water, waste, VOC, surface treatment and H&S are routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met and Environment Management program /ISO 14001:2009/ effectiveness is evaluated.
- Code of Conduct covers human rights, labor practices and decent work. Management of ASSA ABLOY is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
- Any waste metals during machining are separated and recycled. The waste from the water-based painting process is delivered to waste treatment plant.

2.9 Product processing/Installation

Muze door handle sets are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc .adhering to local/national standards and requirements. The product can also be installed directly from the end-user (professional or personal)

2.10 Packaging

Muze door handle sets are packed by 10 individual plastic bags sets in a cardboard box with dimensions: 220 mm x 386 mm x 220 mm

100% of carton is made from recycled material.

Material	Value (%)
Cardboard/paper	75.5
Plastics	24.5
Total	100.0

All materials incurred during installation are directed to a recycling unit.

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

EWC 15 01 01 paper and cardboard packaging EWC 15 01 02 plastic packaging.

2.11 Condition of use

Inside use only to avoid corrosion. Cleaning with a wet soft cloth

2.12 Environment and health during use

There is no harmful emissive potential. No damage to health or impairment is expected under normal use corresponding to the intended use of the product.

2.13 Reference service life

Approved for 100.000 cycles under normal working conditions, 10 years depending on cycle frequency.

2.14 Extraordinary effects

Fire

N/A

Water

Contain no substances that have any impact on water in case of flood.

Mechanical destruction

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

2.15 Re-use phase

The product is possible to re-use during the reference service life and be moved from one door to another. The majority, by weight, of components is zinc which can be recycled. The plastic components can be used for energy recovery within a waste incineration process.

Waste codes according to European Waste Catalogue /EWC/ and Hazardous Waste List -Valid from 1 January 2002:

/EWC/ 17 02 03 plastic

/EWC/ 17 04 04 zinc

/EWC/ 17 04 05 iron and steel

2.16 Disposal

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

2.17 Further information

Assa Abloy Aube Anjou SA 21 Rue Michel Couet 49160 LONGUE (France)



3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of Muze door handle as specified in Part B requirements on the EPD for PCR Locks and fittings: (mechanical & electromechanical locks & Fittings)

Declared unit

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Name	Value	Unit
Declared unit	1	piece of door handle
Mass (without packaging)	0.643	kg
Conversion factor to 1 kg	1.556	-

3.2 System boundary

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

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
- C4 Disposal (landfill)

This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of waste state or disposal of final residues.

 D - Declaration of all benefits or recycling potential from EOL and A5.

3.3 Estimates and assumptions

EoL:

In the End-of-Life phase, for all the materials which can be recyalced, 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

PE INTERNATIONAL 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 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. In this EPD, the following specific life cycle inventories for the WIP are considered for:

- · Waste incineration of plastic
- Waste incineration of paper

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

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 transp	ort	
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	%

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (Paper packaging)	0.04	kg
Output substances following waste treatment on site (Plastic packaging)	0.013	kg

Reference service life

Name	Value	Unit
Reference service life	10	а

End of life (C1-C4)

Name	Value	Unit
Collected separately Zinc, steel, plastics	0.643	kg
Collected as mixed construction waste – construction waste for landfilling	0.0002	kg
Reuse Plastics	0.006	kg
Recycling Zinc, steel	0.6358	kg
Landfilling - Construction waste for landfilling	0.0002	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	0.695	kg
Recycling Zinc	85.64	%
Recycling Steel	5.75	%
Reuse Plastics	0.96	%
Reuse Paper packaging (from A5)	5.75	%
Reuse Plastic packaging (from A5)	1.87	%
Loss Construction waste for landfilling (no recycling potential)	0.03	%



5. LCA: Results

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

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PER PENF PENF PENF SM RSF NRS FW RESU One I	M M CT RE RRM RRM PER PRINCIPAL REPORT REPOR	Total use Non rene Non re Total u Use S OF THe of Mu Haza Non ha: Radio	of renew wable prenewable of no Use of no renew Use of no Use of no renewable December of non re	ry energy utilizar vable primary energy utilizar energy utilizar energy utilizar energy utilizar no renew resour second ewable enewable of net fr A — OU or han meter aste disp waste disp	eter ergy as e y resour- tion mary en nergy as y energy tion rable prir ces ary mate seconda de secon- esh wate TPUT dle cosed isposed	nergy caces as nergy research energy as maternary energy energial ry fuels dary fuels	arrier naterial ources carrier erial ergy Un [kg [kg	Unit [MJ]		2.08 0.00 2.08 1.11 0.00 1.11 2.07 0.00 0.00 7.23 1.22 3.11 2.09	-A3	A4 1.59E-0 2.73E-0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 4.14E-0. 5.49E-0.	2 2.49 1 3.39 0 0.000 0 0.000 0 0.000 5 2.44 6 2.35 5 4.45 6 1.70	E-03 E+00 E+00 E+00 E-04 E-03 E-03 E-06 E-03	7.77E-(- - - 6.65E-(0.00E+ 0.00E+ 1.71E-(- - - - - - - - - - - - - - - - - -	000 000 005 006 005 006	4.60E 6.82E 0.00E 0.00E 3.82E 4.76E 1.27E 2.85E	:-04 :-03 +00 +00 :-05 :-05	-1.06E+01 -1.06E+01 -3.97E+01 0.00E+00 0.00E+00 -3.80E-02 D -4.35E-03
PER PER PENF PENF PENF SM RSF NRS FW RESU One Param HWI NHW RWI CRU	MM CT RE RRM SF / JLTS piec eter D D D J J J J J J J J J J J J J J J J	Renewab Total use Non rene Non re Total u Use S OF THe of Mu Haza Non haza Radio	of renew wable prenewable use of no Use of see of renewable use of no Use of no release of no releas	ry energy utilization vable primary energy utilization renew resourdisection for the following tenergy asteroids asteroids asteroids of the following tenergy wasteroids asteroids asteroi	eter ergy as e y resour- tion mary en nergy as y energy tion rable prin reces ary mate seconda le second esh wate TPUT dle cosed isposed use	nergy caces as nergy research energy as maternary energy energial ry fuels dary fuels	arrier naterial ources carrier erial ergy Is Un [kg [kg [kg	Unit [MJ]		2.08 0.00 2.08 1.11 0.00 1.11 2.0 0.00 0.00 7.25 1.22 3.11 2.00 0.00	BE+01 BE+02 BE+00 BE+00 BE+00 BE+00 BE+00 BE+00 BE+00 BE+00 BE+00 BE-02 BE-01 BE-02 BE-01 BE-02 BE-01 BE-02	A4 1.59E-0: - 2.73E-0 0.00E+0 0.00E+0 0.00E+0 2.28E-0: ORIES A4 5.52E-0: 4.14E-0: 5.49E-0: 0.00E+0	2 2.49 1 3.39 0 0.000 0 0.000 5 2.44 3 2.35 5 4.45 6 1.70 0 0.000	E-03 E-02 E+00 E+00 E-04 E-06 E-03 E-06 E+00	7.77E-(6.65E-(0.00E+(0.00E+(1.71E-(- 5.05E-(1.54E-(5.22E-(0.00E+(- 0.0	000 000 005 006 006 000 000 000 000 000	4.60E 6.82E 0.00E 0.00E 3.82E C4 4.76E 1.27E 2.85E 0.00E	:-04 :-03 :-05 :-05 :-07 :-07 :-07 :-07	-1.06E+01 -1.06E+01 -1.06E+01 -3.97E+01 0.00E+00 0.00E+00 -3.80E-02 D -4.35E-03 1.76E-02
PER PER PENF PENF PENF SM RSF NRS FW RESU One I Param HWI NHW RWI CRU	MM TT RE RRM ST ST ST ST ST ST ST ST ST S	Total use Non rene Non re Total u Use S OF THe of Mu Haza Non haz Radio Con Ma	of renew wable prenewable prenewable use of no Use of see of ren of non rouse document of the use of see of ren use document of the use of see of ren of non rouse document of the use of t	ry energy utilization vable primary energy utilization renew resour fisecond ewable enewable of net from the primary energy waste disputation recyclic for recyclic primary energy energ	eter ergy as e y resour- tion mary en nergy as y energy tion rable prir ces ary mate seconda le secon- esh wate trput die cosed isposed use ing	nergy caces as nergy research energy as maternary energy energial ry fuels dary fuels	arrier naterial ources carrier erial ergy Un [kg [kg [kg	Unit (MJ) (MJ)		2.08 0.00 2.08 1.11 0.00 1.11 2.00 0.00 0.00 7.22 3.11 2.09 0.00 0.00	-A3	A4 1.59E-0 2.73E-0 0.00E+0 0.00E+0 0.00E+0 2.28E-0. ORIES A4 5.52E-0. 4.14E-0. 5.49E-0. 0.00E+0 0.00E+0	2 2.499 1 3.39 0 0.000 0 0.000 5 2.44 : A6 2.35 5 4.45 6 1.70 0 0.000 0 4.000	E-03 E-02 E+00 E+00 E-04 E-04 E-06 E-06 E-06 E-00 E-00	7.77E-(6.65E-(0.00E+(0.00E+(1.71E-(- 5.05E-(1.54E-(5.22E-(0.00E+(0.00E	00 00 00 05 06 06 00 00	4.60E 6.82E 0.00E 0.00E 0.00E 3.82E 4.76E 1.27E 2.85E 0.00E	:-04 :-03 +00 +00 +00 :-05 :-07 :-03 :-07 +00 +00	-1.06E+01 -1.06E+01 -1.06E+01 -3.97E+01 0.00E+00 0.00E+00 -3.80E-02 -4.35E-03 1.76E-02 -4.20E-03
PER PER PENF PENF PENF SMM RSI NRS FW RESU One I Param HWII NHW RWII CRU MFF	MM TT TREE MM TT TREE MI TRE	Total use Non rene Non re Total u Use S OF THe of Mu Haza Non has Radio Con Ma Materi	of renew wable prenewable use of no Use of see of renewable use of no Use of see of renewable use of no re	ry energy utilizar vable pri rimary energy utilizar vable pri rimary energy utilizar energy energy rimary energy energy resour f second ewable : enewable of net fr A - OU or han meter aste disp waste di aste disp s for re- or recycli mergy re-	eter ergy as e y resour- tion mary en nergy as y energy tion rable prir ces ary mate seconda de secon- esh wate TPUT dle cosed disposed posed use ing covery	nergy caces as nergy research energy as maternary energy energial ry fuels dary fuels	arrier naterial ources carrier erial ergy Un [kg	Unit [MJ]		2.08 0.00 2.08 1.11 0.00 1.11 2.00 0.00 7.29 1.22 3.11 2.00 0.00 0.00 0.00 0.00	-A3	A4 1.59E-0 2.73E-0 0.00E+0 0.00E+0 0.00E+0 2.28E-0. ORIES A4 5.52E-0 4.14E-0. 5.49E-0. 0.00E+0 0.00E+0 0.00E+0	2 2.499 1 3.39 0 0.000 0 0.000 5 2.44 6 2.35 5 4.45 6 1.70 0 0.000 0 4.00 0 0.000	E-03 E-02 E+00 E+00 E-04 E-04 E-06 E-03 E-06 E+00 E-02 E+00 E-02 E+00	7.77E-(6.65E-(0.00E+(0.00E+(1.71E-(- 5.05E-(1.54E-(5.22E-(0.00E+(0.00E	000 000 005 006 005 000 000	4.60E 6.82E 0.00E 0.00E 3.82E 4.76E 1.27E 2.85E 0.00E 0.00E	:-04 :-03 :+00 :+00 :-05 :-07 :-03 :-07 :+00 :+00 :+00	-1.06E+01 -1.06E+01 -3.97E+01 0.00E+00 0.00E+00 -3.80E-02 D -4.35E-03 1.76E-02 -4.20E-03 -
PER PER PENF PENF PENF SM RSF NRS FW RESU One I Param HWI NHW RWI CRU	M M CT	Total use Non rene Non re Total u Use S OF THe of Mu Haza Non ha: Radio Cor Ma Materi Expo	of renew wable prenewable prenewable use of no Use of see of ren of non rouse document of the use of see of ren use document of the use of see of ren of non rouse document of the use of t	ry energy utilization renew resour enewable enew	eter ergy as e y resourtion mary en mergy as y energy tion rable princes ary mate seconda de second de second disposed isposed use ing covery mergy	nergy caces as nergy research energy as maternary energy energial ry fuels dary fuels	arrier naterial ources carrier erial ergy Un [kg [kg [kg	Unit [MJ] [MJ]		2.08 0.00 2.08 1.11 0.00 1.11 2.0 0.00 0.00 0.00 0.00	-A3	A4 1.59E-0 2.73E-0 0.00E+0 0.00E+0 0.00E+0 2.28E-0. ORIES A4 5.52E-0. 4.14E-0. 5.49E-0. 0.00E+0 0.00E+0	2 2.49 1 3.39 0 0.000 0 0.000 0 0.000 5 2.44 6 2.35 5 4.45 6 1.70 0 0.000 0 4.00 0 0.000 0 1.34	E-02 E+00 E+00 E-04 E-06 E-06 E-06 E+00 E+00 E-06 E-07 E-06 E-07 E-06 E-07 E-06 E-07 E-06 E-07	7.77E-(6.65E-(0.00E+(0.00E+(1.71E-(- 5.05E-(1.54E-(5.22E-(0.00E+(0.00E	02 00 00 00 05 06 05 06 00 00	4.60E 6.82E 0.00E 0.00E 0.00E 3.82E 4.76E 1.27E 2.85E 0.00E	:-04 :-03 :-05 :-05 :-07 :-07 :-07 :-00 +00 +00 +00	-1.06E+01 -1.06E+01 -1.06E+01 -3.97E+01 0.00E+00 0.00E+00 -3.80E-02 -4.35E-03 1.76E-02 -4.20E-03



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 97% and 100% to the overall results for all the environmental impact assessment categories hereby considered. Within the production phase, the main contribution for all the impact categories is the production of steel and zinc mainly due to the energy consumption on this process. Steel and zinc

account in total with app. 98% 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.

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

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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

EN 1906:2012

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ISO 9001:2008

Quality management systems - Requirements

ISO 14001:2009

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

FWC

European Waste Catalog



9. Annex

Results shown below were calculated using TRACI Methodology.

PRODUCT STAGE	DESC	RIF	TION <u>O</u>	F THE	SYS1	TEM BO	DUND/	ARY (X = INCLUDED IN LCA:						MND = MODULE NOT DECLARED)						
A1				CONSTRUCTI ON PROCESS														BENEFITS AND LOADS BEYOND THE SYSTEM		
X X X X X X MND X MND X X	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	
Parameter	A1	A2	A3	A4	A5	B1	B2	В3	B4	B5	B6		С	:1	C2	C3	C4		D	
Parameter																	Χ		X	
GWP Global warming potential [kg CO_Eq.] 4.92E+00 1.86E-02 3.73E-03 1.55E-02 2.36E+00	RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of Muze door handle													ı						
Depletion potential of the stratospheric ozone layer Rig CFC11-Eq. 8.01E-09 1.56E-12 3.80E-13 1.48E-12 5.20E-14 6.69E-10	Parameter		Parameter					Unit			A1-3	A4		A	5	C2			D	
Application Layer Layer	GW	GWP		Global warming potential					CO ₂ -Ec	Į.]	4.92E+0	1.86E-02		8.91E-02		3.73E-03	1.55E-02		-2.36E+00	
EP	ODP							[kg CFC11-Eq.]			8.01E-09	1.56E-12		3.80E-13		1.48E-12	5.20E-14		-6.69E-10	
Smog Ground-level smog formation potential [kg g)-eq.] 3.10E-01 2.12E-03 4.41E-04 2.90E-04 3.80E-05 9.28E-02 Resources [MJ] 5.31E+00 3.56E-02 3.28E-03 6.01E-03 6.34E-04 2.75E+00	AP		Acidifi	Acidification potential of land and water					[kg SO ₂ -Eq.]			1.09E-04		2.53E-05		1.95E-05	4.32E-06		-1.07E-02	
Resources [MJ] 5.31E+00 3.56E-02 3.28E-03 6.01E-03 6.34E-04 -2.75E+00	EP			Eutrophication potential					kg N-eq.]		1.17E-0	7.43E-06		1.20E-06		1.14E-06	1.40E-07		-3.75E-04	
Parameter	Sm	Smog		Ground-level smog formation potential					g O₃-eq.]	3.10E-0	2.12E-03				2.90E-04			-9.28E-02	
Parameter	Resou	ırces							[MJ]		5.31E+0	3.56E-02				6.01E-03	6.34E-04		-2.75E+00	
PERE Renewable primary energy as energy carrier [MJ] 2.08E+01	RESU	JLT	S OF TH	IE LCA	\ - RE	SOURC	E USI	E: On	e piec	e of	Muze c	loor ha	ndl	е						
PERM Renewable primary energy resources as material utilization PERT Total use of renewable primary energy [MJ] 2.08E+01 1.59E-02 2.49E-03 7.77E-03 4.60E-04 -1.06E+01	Parameter			Parameter				Unit			A1-A3	A4		A5		C2	C4	ŀ	D	
PERNIT Total use of renewable primary energy resources [MJ] 2.08E+01 1.59E-02 2.49E-03 7.77E-03 4.60E-04 -1.06E+01	PERE Re		enewable primary energy as energy carrier						[MJ] 2		2.08E+01	-		-		-	-		-	
PENRE Non renewable primary energy as energy carrier RMJ 1.11E+02	PER	PERM							[MJ]	C	0.00E+00 -			-		-	-		-	
PENRM Non renewable primary energy as material utilization [MJ] 0.00E+00 - - - - - - - - -	PER	PERT							[MJ]	2	2.08E+01 1.59		9E-02 2.49E-03		-03	7.77E-03	3 4.60E-04		-1.06E+01	
PENRT Total use of non renewable primary energy resources [MJ] 1.11E+02 2.73E-01 3.39E-02 6.65E-02 6.82E-03 -3.97E+01 SM Use of secondary material [kg] 2.07E-02 0.00E+00 0.00E+00	PENRE								[MJ] 1		.11E+02	-		-		-	-		-	
Name	PENRM								[MJ]		0.00E+00	-		-		-	-		-	
RSF Use of renewable secondary fuels [MJ] 0.00E+00 0.00E	PENRT To		Total use	. , ,						1	.11E+02	2.73E-01		3.39E-02		6.65E-02	6.82E-03		-3.97E+01	
NRSF Use of non renewable secondary fuels [MJ] 0.00E+00	SM		U	Jse of secondary material				[kg]		2	2.07E-02	-02 0.00E+00		0.00E+00		0.00E+00	0.00E+00		0.00E+00	
FW	RSF	RSF Use			of renewable secondary fuels				[MJ]		0.00E+00	:+00 0.00E+00		0.00E+00		0.00E+00	0.00E+00		0.00E+00	
RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of Muze door handle Parameter Unit A1-A3 A4 A5 C2 C4 D HWD Hazardous waste disposed [kg] 1.22E-02 5.52E-06 2.35E-06 5.05E-06 4.76E-07 -4.35E-03 NHWD Non hazardous waste disposed [kg] 3.13E-01 4.14E-05 4.45E-03 1.54E-05 1.27E-03 1.76E-02 RWD Radioactive waste disposed [kg] 2.09E-02 5.49E-06 1.70E-06 5.22E-06 2.85E-07 -4.20E-03 CRU Components for re-use [kg] 0.00E+00 0.00E+00 <td>NRS</td> <td>F</td> <td>Use of r</td> <td colspan="3">on renewable secondary fuel</td> <td>fuels</td> <td colspan="2">els [MJ]</td> <td>(</td> <td>0.00E+00</td> <td colspan="2">E+00 0.00E+00</td> <td colspan="2">0.00E+00</td> <td>0.00E+00</td> <td colspan="2">0.00E+00</td> <td>0.00E+00</td>	NRS	F	Use of r	on renewable secondary fuel			fuels	els [MJ]		(0.00E+00	E+00 0.00E+00		0.00E+00		0.00E+00	0.00E+00		0.00E+00	
Parameter Parameter Unit A1-A3 A4 A5 C2 C4 D HWD Hazardous waste disposed [kg] 1.22E-02 5.52E-06 2.35E-06 5.05E-06 4.76E-07 -4.35E-03 NHWD Non hazardous waste disposed [kg] 3.13E-01 4.14E-05 4.45E-03 1.54E-05 1.27E-03 1.76E-02 RWD Radioactive waste disposed [kg] 2.09E-02 5.49E-06 1.70E-06 5.22E-06 2.85E-07 -4.20E-03 CRU Components for re-use [kg] 0.00E+00 0.00E+00 <td< td=""><td>FW</td><td colspan="4">W Use of net fresh water</td><td colspan="3">[m³] 7.25E-02</td><td colspan="2">2.28E-05</td><td colspan="2">2.44E-04</td><td>1.71E-05</td><td>3.82E</td><td>-05</td><td>-3.80E-02</td></td<>	FW	W Use of net fresh water				[m³] 7.25E-02			2.28E-05		2.44E-04		1.71E-05	3.82E	-05	-3.80E-02				
Parameter Parameter Unit A1-A3 A4 A5 C2 C4 D HWD Hazardous waste disposed [kg] 1.22E-02 5.52E-06 2.35E-06 5.05E-06 4.76E-07 -4.35E-03 NHWD Non hazardous waste disposed [kg] 3.13E-01 4.14E-05 4.45E-03 1.54E-05 1.27E-03 1.76E-02 RWD Radioactive waste disposed [kg] 2.09E-02 5.49E-06 1.70E-06 5.22E-06 2.85E-07 -4.20E-03 CRU Components for re-use [kg] 0.00E+00 0.00E+00 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>FLOW</td><td>S AN</td><td>D WAS</td><td>STE</td><td>CATE</td><td>ORIES</td><td>:</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							FLOW	S AN	D WAS	STE	CATE	ORIES	:							
HWD Hazardous waste disposed [kg] 1.22E-02 5.52E-06 2.35E-06 5.05E-06 4.76E-07 -4.35E-03 NHWD Non hazardous waste disposed [kg] 3.13E-01 4.14E-05 4.45E-03 1.54E-05 1.27E-03 1.76E-02 RWD Radioactive waste disposed [kg] 2.09E-02 5.49E-06 1.70E-06 5.22E-06 2.85E-07 -4.20E-03 CRU Components for re-use [kg] 0.00E+00	_		e of Mu			ale														
NHWD Non hazardous waste disposed [kg] 3.13E-01 4.14E-05 4.45E-03 1.54E-05 1.27E-03 1.76E-02 RWD Radioactive waste disposed [kg] 2.09E-02 5.49E-06 1.70E-06 5.22E-06 2.85E-07 -4.20E-03 CRU Components for re-use [kg] 0.00E+00 0.00E+00<	Param	eter		Paran	neter			Un	It		A1-A3	A4		A5		C2				
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