ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Grundfos Holding A/S
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-GRU-20260281-CBI1-EN
Issue date	17/04/2026
Valid to	16/04/2031

MULTILIFT MOG.26 / MOG.31 / MOG.40

Grundfos Holding A/S

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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General Information

Grundfos Holding A/S

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-GRU-20260281-CBI1-EN

This declaration is based on the product category rules:

Pumps for liquids and liquids with solids, 01/08/2021
(PCR checked and approved by the SVR)

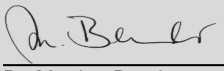
Issue date

17/04/2026

Valid to

16/04/2031

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)



Dr. Martina Bender
(Managing Director Institut Bauen und Umwelt e.V.)

MULTILIFT MOG.26 / MOG.31 / MOG.40

Owner of the declaration

Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro
Denmark

Declared product / declared unit

The declared unit is 1 piece (pcs.) of representative product of MULTILIFT MOG.26/MOG.31/MOG.40 lifting station.

Scope:

The declaration applies to 1 piece of representative unit of MULTILIFT MOG.26/MOG.31/MOG.40 lifting station (representative PN: 97901134 - MOG.40.3.2 3x400V).
The product is produced in Inđjija, Serbia, and the life cycle assessment is based on data collected at the production site. Production has been modeled using annual production data from the year 2024. The declaration covers the MULTILIFT MOG.26/MOG.31/MOG.40 product for the EU and UK market, based on a representative PN chosen.
EPD of construction products may not be comparable if they do not comply with EN 15804+A2 standard.
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.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

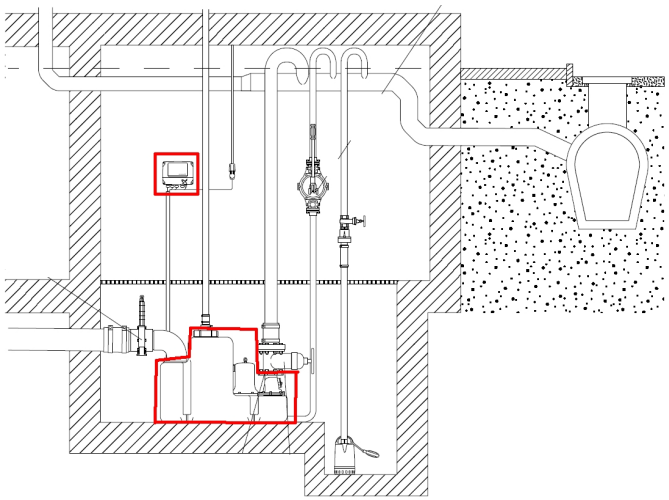
The standard EN 15804 serves as the core PCR			
Independent verification of the declaration and data according to ISO 14025:2011			
☐	internally	☒	externally

Mrs Kim Allbury,
(Independent verifier)

Product

Product description/Product definition

MULTILIFT lifting stations collect wastewater in a tank to discharge it up to the sewer system. The liquid level in the tank is measured continuously and is controlled and monitored by specially designed electronic controllers. The pumps are started and stopped according to the liquid level in the tank. In double-pump lifting stations, the pumps start alternately to achieve an even distribution of operating hours. Automatic pump changeover ensures uninterrupted wastewater transport in case of a fault in one pump. In case the inflow exceeds the performance of one pump, the second pump will also be started, and the two pumps will run in parallel to lower the liquid level in the tank. The motor protection is provided by a thermal switch in the motor winding, a current measurement, a motor circuit breaker (depending on type) and a runtime protection. Under normal conditions and depending on duty point and tank size, the runtime of a MULTILIFT lifting station is 3-60 seconds. The outlet pipe is either DN 80 or DN 100. Grundfos' high quality requirements ensure high robustness and long and trouble-free operation. The production is inspected by an external institute according to EN 12050-1.
The figure below shows the installation of the product. The red rectangle indicates the product in scope. All other fittings, piping, valves and auxiliaries are out of current product system, therefore not included in the EPD.



For the placing on the market in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) the following legal provisions apply:

Machinery Directive (2006/42/EC)
Supply of Machinery (Safety) Regulations 2008 (UK)
Standard used:
EN 809:1998 + A1:2009

Ecodesign Directive (2009/125/EC)

Low Voltage directive (2014/35/EU)
Electrical Equipment (Safety) Regulations 2016 (UK)
Standards used:
EN IEC 60335-1:2023
EN IEC 60335-2-41:2021

EMS directive (2014/30/EU)
Standards used:
EN 61000-3-2:2014
EN 61000-3-3:2013
EN IEC 55014-2:2021
EN IEC 55014-1:2021

EMC Directive (2014/34/EU)
Electromagnetic Compatibility Regulations 2016 (UK)
Standards used:
EN 55014-1:2017 + A11:2020
EN 61000-3-2:2014,
EN 61000-3-3:2013,
EN 61000-6-2:2005 + AC:2005

RoHS Directive 2011/65/EU and 2015/863/EUThe Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2019 (UK)
Standard used:
EN IEC 63000:2018

Marketing of construction products (Regulation (EU) No. 305/2011)
Standard used: EN 12050-1:2015
(Wastewater lifting plants for buildings and sites – Part 1: Lifting plants for wastewater containing faecal matter)

The CE marking takes into account the proof of conformity with the respective harmonized norms based on the legal provisions above.

Application

MULTILIFT MOG is a compact and reliable lifting station with easy-to-operate controller for pumping of domestic wastewater (with faeces) in one-family houses, holiday cottages or light commercial applications.
MULTILIFT MOG is typically used for the following:
• basement installation below sewer level
• renovation or modernisation of existing buildings, for example, developing basements with a fitness room, sauna, bath and washroom
Direct connection of wall-hung or floor-standing toilets with horizontal outlet according to EN 33.

Technical Data

The performance data of the product according to the harmonized norms, based on the harmonization provisions above apply.
The relevant technical specifications according to the *PCR Part B* are given in the table below.
Characteristics that are the same for all product groups are only given once. Others are given individually for all products.
Grundfos Inđjija production has been assessed and certified as meeting the requirements in ISO 14001, ISO 45001, ISO 50001 and ISO 9001.

Constructional data

(where no specific type is indicated, valid for all MULTILIFT MOG.26/MOG.31/MOG.40 types in scope)

Name	Value	Unit
Frequency	50	Hz
Voltage	400	V
Flow range (rated)	3.2	m^3/h
Flow max.	16	m^3/h
nominal capacity (MOG.26 - see B6/1 scenario)	3.7	kW
nominal capacity (MOG.31 - see B6/2 scenario)	3.9	kW
nominal capacity (MDG.40 - see B6/3 scenario)	5.2	kW
Pumped liquid	faecal wastewater	-
Rated head (MOG.26)	30.6	m
Rated head (MOG.31)	34.9	m
Rated head (MOG.40)	43.7	m
Head max. (MOG.26)	31.4	m
Head max. (MOG.31)	35.7	m
Head max. (MOG.40)	46.4	m
Duty type	S3-50% 1min	-
IP class	IP 68	-

See use phase scenarios in the EPD specific for each MOG type (MOG.26/MOG.31/MOG.40)

Performance data of the product according to the harmonised standards, based on provisions for harmonisation.

Base materials/Ancillary materials

Name	Value	Unit
Cast iron	37.10	%
Carbon steel	11.95	%
Stainless steel	3.96	%
Aluminium	0.61	%
Copper & brass	2.74	%
Electronics	3.73	%
Lubricant (oil) & chemicals	0.20	%
Paper	0.65	%
Rubbers	0.47	%
Magnet / ceramics (inert)	0.05	%
Soft plastics and foams	0.91	%
Solid thermoplastics	19.14	%
Corrugated board	0.22	%
Wood	18.29	%
TOTAL	100	%

all ingredients are given rounded to 2 decimals accuracy

REACH

This product/article contains substances listed in the *ECHA candidate list* (date: 10.11.2024) exceeding 0.1 percentage by mass: **YES**

SVHC	CAS-number	SCIP number
1,2-dimethoxyethane	110-71-4	2579b797-3594-4590-9e86-de31c9f9fe74
Lead	7439-92-1	
Lead monoxide	1317-36-8	
Dodecamethylcyclohexasiloxane	540-97-6	N/A
Octamethylcyclotetrasiloxane	556-67-2	

CMR

This product contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list (date: 10.11.2024) exceeding 0.1 percentage by mass: **NO**

Biocide

Biocide products were added to this product: **NO**

Reference service life

The RSL of the declared product is directly influencing the results in this study, as use stage scenario is dependent on the RSL; The use stage sub-module B6 is declared per RSL - in order to facilitate building calculations, an estimated RSL of 10 years can be used. This is an EU consensus-based estimation, referenced on page 55 in the document Appendix 6: EuP Lot11 Water Pumps Issue 6. The text is also reproduced here: *Estimating 'average' lifetime is difficult, with the Europump figures based on the collective views of suppliers. For pumps operating under normal conditions, it is thought that these numbers are indeed reasonable, but there are sometimes exceptional circumstances which shorten this 'natural' lifetime*. Lifetime is calculated based on the assessed weakest part to be 10 years on average. Calculation is based on performance test, knowledge of load profile and equations provided by the component supplier. Assessment is based on expert opinion.

LCA: Calculation rules

Declared Unit

The declared unit is 1 piece (pcs.) of representative product of MULTILIFT MOG.26/.31/.40 lifting station.

The reference values has been obtained based on representative product PN data (EU /UK).

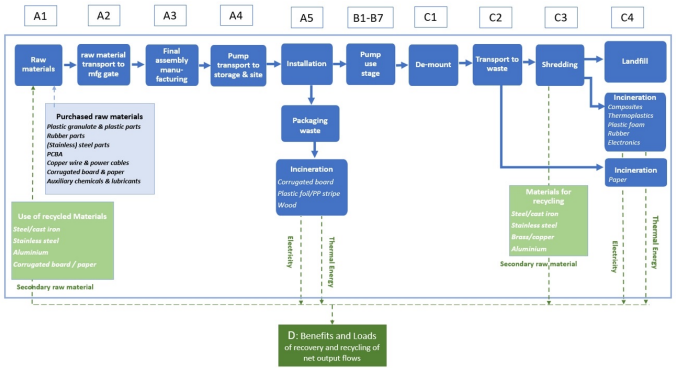
System boundary

This EPD is Cradle-To-Grave and Module D. The system boundaries of the EPD follow the modular approach in *EN 15804*.

Declared unit

Mass includes packaging.

Name	Value	Unit
Declared unit	1	pce.
Mass reference	120.27	kg/pce
Conversion factor [Mass/Declared Unit]	120.27	-



Production and installation (A1-A5)
Modules A1-A3 refer to the product stage and include raw materials extraction and processing, transportation, and the manufacturing process. The product stage is included in this study, and according to *EN 15804* the system boundary with nature is set to include those processes that provide the material and energy inputs into the system and the following manufacturing, transport up to the factory gate as well as the processing of waste arising from those processes. The assembly of the product, as well as the packaging, are also included in A1-A3. Wastes and losses are included in the modules where they occur according to the polluter pays principle and the modular approach of *EN 15804:2019+A2*

Module A4 regards the transportation from the production site to the regional distribution centre, and finally to the construction and product application site. Module A5 refers to the installation process of the pump including the transportation of packaging waste to the treatment site and the waste treatment of packaging. The use of energy during installation is negligible for the selected functional unit.

Use stage (B1-B7):
In this study, all use stage modules are assessed, though B1, B2 and B7 are assessed to be zero. By decision no. 20170712-n of the *SVR*, the modules B3, B4 and B5 are by default declared as "MNR" (module not relevant).
Contributions to operational energy use during the use stage (B6) come from the electricity consumption of the product. The annual electricity consumption is calculated by multiplying the average power input, which is based on a defined load profile, with the annual running hours. For use stage (B6) European Average electricity grid mix has been used. These values are declared in the scenarios section of *Operational energy use (B6)* table.

Scenario description:
- B6/1: use profile for MOG.26 pump station
- B6/2: use profile for MOG.31 pump station
- B6/3: use profile for MOG.40 pump station

The End of Life stage (C1-C4)
The End of Life stage (C1-C4) Modules C1-C4 refer to the End of life stage. A product reaches the end of life of its service life when it no longer provides any functionality. This life cycle stage includes all activities from the end-of-life of the control valve until all materials and components are processed, reused, recycled, or disposed of. C1 regards the dismantling of the pump, and this module is a manual activity. C2 regards the transport to waste processing, C3 refers to the processing (shredding) of waste for recycling, and C4 refers to waste disposal: landfilling and incineration. The End of Life assumption is that 95 % is collected as electronic waste, while 5 % goes to landfill. The specific amounts are shown in the scenarios section.

Loads and benefits beyond system boundary (D):
Module D refers to the burdens and benefits beyond the system boundaries. According to *EN 15804*, module D includes the reuse, recovery and/or recycling potentials, expressed in net impacts and benefits. Contributions to module D come from waste incineration processes in A5 and C4, as well as material (metal) recycling in C3. The specific fractions and net flows are shown in the scenarios section.

Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Europe

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. The primary database used for background data is *Sphera (version 2025.2)*, while *Ecoinvent (version 3.11)* serves as a secondary database.

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon
The biogenic carbon content quantifies the amount of biogenic carbon in a construction product leaving the factory gate, and it will be separately declared for the product and for any accompanying packaging, as required by the *PCR Part A*. The carbon content of cardboard and paper is assumed to 0.43 kg C, meaning 43 % of the paper and cardboard packaging is biogenic carbon. The carbon content of wood is assumed to 0.435 kg C, meaning 43.5 % of the wooden packaging is biogenic carbon. Overall, there is a certain amount of biogenic Carbon in the product leaving the factory gate and has to be considered.

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in product	0.334	kg C
Biogenic carbon content in accompanying packaging	9.684	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Considering an average composition for the average EPD, all stages **except for B6** are considered to be under the same condition.
Differences in motor amongst the averaged types result in different energy consumption, therefore different scenarios have been applied for the B6 stage based on exact model types.

Transport from the gate to the site (A4)

Name	Value	Unit
Litres of fuel	1,7	l/100 tkm
Transport distance	1300	km
Capacity utilisation (including empty runs)	61.75	%
Gross density of products transported	156.41	kg/m^3
Wastage during distribution	-	%

Installation into the building (A5)

Name	Value	Unit
Packaging waste for incineration (LDPE film)	1.092	kg
Packaging waste for incineration (Paper/Cardboard)	0.265	kg
Packaging waste for incineration (Wood)	22.00	kg

An estimated RSL of 10 years can be used to facilitate building calculations. This is an EU consensus-based estimation, referenced in Appendix 6: Lot 11 – *Water pumps (in commercial buildings, drinking water pumping, food industry, agriculture), issue 6* prepared by *AEA Energy & Environment* for the European Commission in the context of the *Eco Design Directive*

Reference service life

Name	Value	Unit
Reference service life according to the manufacturer	10	a

Operational energy use (B6)

(where no specific type is indicated, valid for all MULTILIFT MOG.26/MOG.31/MOG.40 types in scope)

Name	Value	Unit
Running time (in operation)	68.44	h/a
Standby time	8691.56	h/a
Average power input - operation (MOG.26 - B6/1 scenario)	3.33	kW
Avergae power input - operation (MOG.31 - B6/2 scenario)	3.51	kW
Average power input - operation (MOG.40 - B6/3 scenario)	4.68	kW
Average power input - standby	0.002	kW
Electricity consumption - operation (MOG.26 - B6/1 scenario)	228.05	kWh/a
Electricity consumption - operation (MOG.31 - B6/2 scenario)	240.23	kWh/a
Electricity consumption - operation (MOG.40 - B6/3 scenario)	320.30	kWh/a
Electricity consumption - standby	17.38	kWh/a
Total energy consumption - in RSL (MOG.26 - B6/1 scenario)	2404.3	kWh
Total energy consumption - in RSL (MOG.31 - B6/2 scenario)	2532.6	kWh
Total energy consumption - in RSL (MOG.40 - B6/3 scenario)	3376.8	kWh

Power consumption for MOG.26/MOG.31/MOG.40 are differentiated in B6/1, B6/2, B6/3 scenarios respectively.

End of life (C1-C4)

EoL scenario:

- 95 m/m % of the EoL product is handled as WEEE (metals recycled in C3, plastics and electronics are energy recovered in C4, inert parts landfilled in C4)
- 5 m/m % as landfilled (C4)

Name	Value	Unit
Collected separately waste type (WEEE)	92.06	kg
Collected as mixed construction waste (landfilled)	4.85	kg
Reuse	-	kg
Recycling (metals)	64.38	kg
Energy recovery (plastics, rubbers, paper)	26.95	kg
Landfilling (incl. mixed construction waste)	5.58	kg
Transportation distance (C2)	100	km

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

Name	Value	Unit
A1, incineration w/energy recov. thermal energy	7.739	MJ
A5, incineration w/energy recov. electric energy	57.65	MJ
A5, incineration w/energy recov. thermal energy	103.7	MJ
C3, aluminium for recycling (net amounts)	0.693	kg
C3, carbon steel for recycling (net amounts)	56.04	kg
C3, stainless steel for recycling (net amounts)	4.519	kg
C3, copper for recycling (net amounts)	3.132	kg
C4, incineration w/energy recov. electric energy	147.4	MJ
C4, incineration w/energy recov. thermal energy	263.4	MJ

LCA: Results

The LCA results in module B6 are given on a period of 10 years in line with RSL period, according to PCR Part B.
The indicator results for module B6 are declared for MULTILIFT MOG.26/MOG.31/MOG.40 average domestic usage pattern scenario (0.6 m^3/d wastewater load)

Scenario description:
- B6/1: use profile for MOG.26 pump station
- B6/2: use profile for MOG.31 pump station
- B6/3: use profile for MOG.40 pump station

Specific GWP_t index of electricity mix within A1-3: 0.390 kg CO_{2eq}/kWh.

Characterization model: EN 15804:2012+A2:2019, PEF. By Decision no. 20170712-n of the IBU SVR, the modules B3, B4, B5 are marked as MNR (module not relevant) as default.

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

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	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	X	X	MNR	MNR	MNR	X	X	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece of MOG.40 representative

Parameter	Unit	A1	A2	A3	A4	A5	B1	B2	B6/1	B6/2	B6/3	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	3.35E+02	1.1E+01	9.26E+00	1.42E+01	4.44E+01	0	0	7.89E+02	8.32E+02	1.11E+03	0	0	1.76E+00	1.93E+00	7.19E+01	-6.47E+01
GWP-fossil	kg CO_2 eq	3.33E+02	1.08E+01	4.42E+01	1.4E+01	4.26E+00	0	0	7.79E+02	8.2E+02	1.09E+03	0	0	1.73E+00	1.9E+00	7.02E+01	-6.44E+01
GWP-biogenic	kg CO_2 eq	1.09E+00	5.28E-02	-3.5E+01	7.17E-02	4.02E+01	0	0	8.01E+00	8.43E+00	1.12E+01	0	0	8.89E-03	1.96E-02	1.71E+00	-2.82E-01
GWP-luluc	kg CO_2 eq	5.07E-01	1.08E-01	5.46E-02	1.48E-01	3.11E-03	0	0	2.57E+00	2.71E+00	3.61E+00	0	0	1.84E-02	6.28E-03	1.78E-03	-4.27E-02
ODP	kg CFC11 eq	2.88E-07	1.8E-12	9.33E-11	2.39E-12	4.42E-12	0	0	1.77E-08	1.87E-08	2.49E-08	0	0	2.97E-13	4.34E-11	4.84E-12	-1.42E-09
AP	mol H^+ eq	2.44E+00	7.77E-02	5.42E-02	9.06E-02	7.8E-03	0	0	1.71E+00	1.8E+00	2.4E+00	0	0	1.12E-02	4.17E-03	1.13E-02	-1.36E-01
EP-freshwater	kg P eq	3.04E-03	2.84E-05	8.37E-05	3.89E-05	1.27E-06	0	0	1.67E-03	1.75E-03	2.34E-03	0	0	4.82E-06	4.07E-06	2.94E-05	-3.01E-05
EP-marine	kg N eq	2.04E-01	3.76E-02	2.23E-02	4.49E-02	2.53E-03	0	0	4.09E-01	4.31E-01	5.75E-01	0	0	5.56E-03	1E-03	3.5E-03	-2.05E-02
EP-terrestrial	mol N eq	2.21E+00	4.09E-01	2.43E-01	4.87E-01	3.45E-02	0	0	4.59E+00	4.83E+00	6.44E+00	0	0	6.04E-02	1.12E-02	5.43E-02	-2.27E-01
POCP	kg NMVOC eq	7.2E-01	7.6E-02	7.41E-02	8.57E-02	6.41E-03	0	0	1.02E+00	1.07E+00	1.43E+00	0	0	1.06E-02	2.48E-03	9.66E-03	-6.83E-02
ADPE	kg Sb eq	1.68E-02	7.13E-07	2.14E-06	9.59E-07	6.45E-08	0	0	1.62E-04	1.71E-04	2.27E-04	0	0	1.19E-07	3.96E-07	6.23E-08	-6.42E-03
ADPF	MJ	5.55E+03	1.42E+02	7.37E+02	1.85E+02	1.21E+01	0	0	1.59E+04	1.67E+04	2.23E+04	0	0	2.29E+01	3.89E+01	1.37E+01	-8.61E+02
WDP	m^3 world eq deprived	6.04E+01	4.91E-02	9.37E-01	6.59E-02	4.3E+00	0	0	1.95E+02	2.06E+02	2.74E+02	0	0	8.17E-03	4.77E-01	7.01E+00	2.77E-03

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 piece of MOG.40 representative

Parameter	Unit	A1	A2	A3	A4	A5	B1	B2	B6/1	B6/2	B6/3	B7	C1	C2	C3	C4	D
PERE	MJ	1.46E+03	1.02E+01	3.93E+01	1.39E+01	3.81E+02	0	0	1.09E+04	1.14E+04	1.53E+04	0	0	1.73E+00	2.66E+01	1.51E+01	-1.89E+02
PERM	MJ	1.17E+01	0	3.78E+02	0	-3.78E+02	0	0	0	0	0	0	0	0	0	-1.17E+01	0

PERT	MJ	1.47E +03	1.02E +01	4.17E +02	1.39E +01	2.72E +00	0	0	1.09E +04	1.14E +04	1.53E +04	0	0	1.73E +00	2.66E +01	3.4E+00	-1.89E +02
PENRE	MJ	4.58E +03	1.42E +02	6.9E+02	1.85E +02	5.91E +01	0	0	1.59E +04	1.67E +04	2.23E +04	0	0	2.29E +01	3.89E +01	9.33E +02	-8.61E +02
PENRM	MJ	9.72E +02	0	4.7E+01	0	-4.7E+01	0	0	0	0	0	0	0	0	0	-9.2E+02	0
PENRT	MJ	5.55E +03	1.42E +02	7.37E +02	1.85E +02	1.21E +01	0	0	1.59E +04	1.67E +04	2.23E +04	0	0	2.29E +01	3.89E +01	1.37E +01	-8.61E +02
SM	kg	4.5E+01	0	2.44E-01	0	0	0	0	0	0	0	0	0	0	0	0	1.94E +01
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	2.12E +00	5.05E-03	4.95E-02	6.88E-03	1.01E-01	0	0	8.43E +00	8.88E +00	1.18E +01	0	0	8.53E-04	2.06E-02	1.64E-01	9.63E-02

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 = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 piece of MOG.40 representative

Parameter	Unit	A1	A2	A3	A4	A5	B1	B2	B6/1	B6/2	B6/3	B7	C1	C2	C3	C4	D
HWD	kg	1.25E +00	5.65E-09	1.61E-07	7.41E-09	5.1E-09	0	0	2.08E-05	2.19E-05	2.92E-05	0	0	9.19E-10	5.08E-08	6.58E-09	2.66E-03
NHWD	kg	1.55E +01	1.94E-02	3.11E-01	2.58E-02	7.29E-01	0	0	1.23E +01	1.3E+01	1.73E +01	0	0	3.2E-03	3.01E-02	7.08E +00	4.33E +00
RWD	kg	2.71E-01	2.62E-04	1.12E-02	3.49E-04	5.12E-04	0	0	2.51E +00	2.64E +00	3.52E +00	0	0	4.32E-05	6.13E-03	6.15E-04	-5.2E-02
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	6.44E +01	0	8.76E-04
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	5.77E +01	0	0	0	0	0	0	0	0	0	1.47E +02	0
EET	MJ	7.74E +00	0	0	0	1.04E +02	0	0	0	0	0	0	0	0	0	2.63E +02	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 piece of MOG.40 representative

Parameter	Unit	A1	A2	A3	A4	A5	B1	B2	B6/1	B6/2	B6/3	B7	C1	C2	C3	C4	D
PM	Disease incidence	2.61E-05	6.01E-07	5.44E-06	3.95E-07	4.86E-08	0	0	1.41E-05	1.49E-05	1.98E-05	0	0	4.9E-08	3.45E-08	8.29E-08	3.85E-07
IR	kBq U235 eq	4.29E +01	3.76E-02	1.78E +00	5.01E-02	8.1E-02	0	0	4.14E +02	4.36E +02	5.82E +02	0	0	6.21E-03	1.01E +00	9.52E-02	-8.95E +00
ETP-fw	CTUe	2.17E +03	1.8E+02	1.25E +02	2.4E+02	7.29E +00	0	0	2.68E +03	2.83E +03	3.77E +03	0	0	2.98E +01	7.97E +00	8.4E+00	-3.21E +01
HTP-c	CTUh	1.35E-06	2.44E-09	8.2E-09	3.24E-09	4.38E-10	0	0	2.53E-07	2.66E-07	3.55E-07	0	0	4.02E-10	1.57E-09	6.64E-10	2.93E-07
HTP-nc	CTUh	3.43E-06	1.33E-07	1.15E-07	1.81E-07	2.18E-08	0	0	5.32E-06	5.61E-06	7.48E-06	0	0	2.25E-08	1.03E-07	1.54E-08	-1.4E-07
SQP	SQP	1.2E+03	5.94E +01	7.07E +03	8.17E +01	4.06E +00	0	0	6.37E +03	6.71E +03	8.94E +03	0	0	1.01E +01	1.56E +01	3.8E+00	-1.92E +02

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator 'Potential Human exposure efficiency relative to U235'.
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 or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators 'abiotic depletion potential for non-fossil resources', 'abiotic depletion potential for fossil resources', 'water (user) deprivation potential, deprivation-weighted water consumption', 'potential comparative toxic unit for ecosystems', 'potential comparative toxic unit for humans – cancerogenic', 'Potential comparative toxic unit for humans - not cancerogenic', 'potential soil quality index'. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

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