Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.64

Product:	3003554 - PE Toilet socket Short BK 110x110 PN4
Unit:	1 piece
Manufacturer:	Wavin - IT - SM Maddalena

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - IT - SM Maddalena (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.56E-1	2.90E-2	1.70E-2	4.02E-1	2.84E-3	2.51E-1	1.65E-3	-1.97E-1	4.61E-1
GWP-f	kg CO2 eq	3.87E-1	2.90E-2	1.45E-2	4.30E-1	2.84E-3	2.14E-1	1.65E-3	-2.12E-1	4.37E-1
GWP-b	kg CO2 eq	-3.08E-2	1.66E-5	1.23E-3	-2.96E-2	1.72E-6	3.65E-2	1.29E-6	1.59E-2	2.28E-2
GWP-luluc	kg CO2 eq	3.07E-4	1.06E-5	1.23E-3	1.54E-3	1.00E-6	1.60E-5	2.47E-8	-1.62E-4	1.40E-3
ODP	kg CFC11 eq	3.14E-8	6.65E-9	1.46E-9	3.95E-8	6.54E-10	2.48E-9	3.64E-11	-1.53E-8	2.73E-8
AP	mol H+ eq	1.68E-3	1.98E-4	5.85E-5	1.93E-3	1.62E-5	1.10E-4	8.75E-7	-5.24E-4	1.53E-3
EP-fw	kg P eq	1.03E-5	2.33E-7	2.25E-7	1.08E-5	2.33E-8	4.74E-7	1.14E-9	-3.40E-6	7.87E-6
EP-m	kg N eq	3.00E-4	6.66E-5	9.89E-6	3.76E-4	5.78E-6	3.49E-5	7.93E-7	-1.08E-4	3.09E-4
EP-T	mol N eq	3.34E-3	7.34E-4	1.11E-4	4.18E-3	6.37E-5	3.84E-4	3.54E-6	-1.22E-3	3.42E-3
POCP	kg NMVOC eq	1.43E-3	2.07E-4	3.45E-5	1.67E-3	1.82E-5	1.16E-4	1.37E-6	-4.92E-4	1.31E-3
ADP-mm	kg Sb eq	2.42E-5	7.27E-7	3.53E-7	2.53E-5	7.34E-8	3.83E-7	8.74E-10	-1.71E-6	2.41E-5
ADP-f	MJ	1.17E+1	4.42E-1	1.91E-1	1.23E+1	4.35E-2	2.95E-1	2.66E-3	-5.33E+0	7.32E+0
WDP	m3 depriv.	2.47E-1	1.33E-3	6.76E-2	3.16E-1	1.34E-4	5.99E-3	1.22E-5	-1.05E-1	2.17E-1
PM	disease inc.	1.67E-8	2.54E-9	5.86E-10	1.98E-8	2.56E-10	1.63E-9	1.83E-11	-5.21E-9	1.65E-8
IR	kBq U-235 eq	1.56E-2	1.93E-3	1.78E-4	1.77E-2	1.90E-4	9.20E-4	1.25E-5	-4.08E-3	1.48E-2
ETP-fw	CTUe	6.18E+0	3.56E-1	3.01E-1	6.84E+0	3.53E-2	4.34E-1	2.88E-3	-2.04E+0	5.27E+0
HTP-c	CTUh	1.39E-10	1.30E-11	1.61E-11	1.68E-10	1.26E-12	4.74E-11	6.56E-14	-5.26E-11	1.64E-10
HTP-nc	CTUh	3.23E-9	4.20E-10	3.33E-10	3.99E-9	4.21E-11	5.83E-10	1.62E-12	-1.10E-9	3.51E-9
SQP	Pt	4.15E+0	3.67E-1	3.48E-2	4.55E+0	3.72E-2	2.29E-1	6.82E-3	-5.17E+0	-3.40E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.88E-1	6.21E-3	6.61E-1	1.46E+0	6.25E-4	1.40E-2	1.08E-4	-9.04E-1	5.66E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.88E-1	6.21E-3	6.61E-1	1.46E+0	6.25E-4	1.40E-2	1.08E-4	-9.04E-1	5.66E-1
PENRE	MJ	1.25E+1	4.69E-1	2.08E-1	1.32E+1	4.62E-2	3.14E-1	2.82E-3	-5.77E+0	7.77E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.25E+1	4.69E-1	2.08E-1	1.32E+1	4.62E-2	3.14E-1	2.82E-3	-5.77E+0	7.77E+0
PET	MJ	1.33E+1	4.75E-1	8.69E-1	1.46E+1	4.68E-2	3.28E-1	2.93E-3	-6.68E+0	8.34E+0
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	4.77E-3	4.90E-5	1.60E-3	6.42E-3	4.93E-6	2.38E-4	3.30E-6	-1.92E-3	4.75E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.27E-6	1.10E-6	1.86E-7	5.56E-6	1.11E-7	5.48E-7	3.19E-9	-2.89E-6	3.33E-6
NHWD	kg	2.59E-2	2.65E-2	1.81E-3	5.41E-2	2.70E-3	1.85E-2	1.17E-2	-6.20E-3	8.08E-2
RWD	kg	1.72E-5	3.01E-6	1.98E-7	2.04E-5	2.96E-7	1.18E-6	1.74E-8	-4.06E-6	1.79E-5
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

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