Environmental Profile

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

Ecochain v3.5.80

Product:	3022148 - PVCU SemiReducer BR 400x200 UD
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

PVC external sewage pipes with a solid wall are produced in two classes of circumferential stiffness (SN8, SN4), which enables optimal selection depending on the load conditions. A wide portfolio of system fittings facilitates the construction of many schemes of sewage networks, as well as connections with systems made of other materials. Diameter range DN/OD 110-500mm. The pipes meet the requirements of the PN-EN 1401-1 standard.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
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 - PL -Buk - Extra products (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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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	1.73E+1	1.91E-1	1.01E-2	1.75E+1	2.47E-1	8.06E+0	7.17E-2	-9.80E+0	1.61E+1
GWP-f	kg CO2 eq	1.82E+1	1.91E-1	1.02E-2	1.84E+1	2.47E-1	6.93E+0	7.17E-2	-9.73E+0	1.60E+1
GWP-b	kg CO2 eq	-9.68E-1	1.16E-4	-1.08E-4	-9.68E-1	1.50E-4	1.13E+0	9.11E-5	-6.65E-2	9.73E-2
GWP-luluc	kg CO2 eq	1.52E-2	6.76E-5	1.05E-5	1.52E-2	8.74E-5	2.92E-3	1.95E-6	-6.34E-3	1.19E-2
ODP	kg CFC11 eq	9.69E-6	4.40E-8	5.79E-10	9.74E-6	5.69E-8	7.85E-7	2.84E-9	-4.81E-6	5.77E-6
AP	mol H+ eq	8.46E-2	1.09E-3	1.03E-4	8.58E-2	1.41E-3	1.36E-2	6.84E-5	-3.67E-2	6.42E-2
EP-fw	kg P eq	8.03E-4	1.57E-6	5.77E-7	8.05E-4	2.03E-6	9.71E-5	8.76E-8	-3.53E-4	5.51E-4
EP-m	kg N eq	1.43E-2	3.89E-4	1.09E-5	1.47E-2	5.03E-4	3.34E-3	4.20E-5	-6.44E-3	1.22E-2
EP-T	mol N eq	1.57E-1	4.29E-3	1.30E-4	1.61E-1	5.55E-3	3.68E-2	2.73E-4	-6.93E-2	1.35E-1
POCP	kg NMVOC eq	5.38E-2	1.23E-3	4.40E-5	5.51E-2	1.59E-3	1.10E-2	9.31E-5	-2.37E-2	4.42E-2
ADP-mm	kg Sb eq	7.55E-3	4.94E-6	1.38E-6	7.56E-3	6.39E-6	5.36E-5	6.82E-8	-1.97E-4	7.42E-3
ADP-f	MJ	4.60E+2	2.93E+0	9.51E-2	4.63E+2	3.79E+0	3.74E+1	2.06E-1	-2.35E+2	2.70E+2
WDP	m3 depriv.	2.90E+1	9.00E-3	3.66E-3	2.90E+1	1.16E-2	1.45E+0	1.32E-3	-1.37E+1	1.67E+1
PM	disease inc.	6.11E-7	1.72E-8	6.37E-10	6.29E-7	2.23E-8	1.71E-7	1.41E-9	-2.38E-7	5.85E-7
IR	kBq U-235 eq	1.00E+0	1.28E-2	7.14E-5	1.02E+0	1.66E-2	1.30E-1	9.45E-4	-4.46E-1	7.19E-1
ETP-fw	CTUe	3.81E+2	2.38E+0	8.47E-1	3.84E+2	3.08E+0	2.78E+2	3.07E+0	-1.38E+2	5.31E+2
HTP-c	CTUh	1.42E-8	8.47E-11	4.32E-11	1.43E-8	1.10E-10	4.23E-9	5.51E-12	-5.11E-9	1.35E-8
HTP-nc	CTUh	4.42E-7	2.84E-9	1.10E-9	4.46E-7	3.67E-9	9.89E-8	5.91E-10	-1.76E-7	3.72E-7
SQP	Pt	1.66E+2	2.51E+0	1.57E-1	1.69E+2	3.24E+0	2.34E+1	5.24E-1	-4.67E+1	1.50E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.15E+1	4.21E-2	1.68E+0	7.33E+1	5.44E-2	2.67E+0	7.42E-3	-1.44E+1	6.16E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.15E+1	4.21E-2	1.68E+0	7.33E+1	5.44E-2	2.67E+0	7.42E-3	-1.44E+1	6.16E+1
PENRE	MJ	4.94E+2	3.11E+0	1.01E-1	4.97E+2	4.03E+0	3.98E+1	2.19E-1	-2.53E+2	2.88E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.94E+2	3.11E+0	1.01E-1	4.97E+2	4.03E+0	3.98E+1	2.19E-1	-2.53E+2	2.88E+2
PET	MJ	5.65E+2	3.15E+0	1.79E+0	5.70E+2	4.08E+0	4.24E+1	2.26E-1	-2.67E+2	3.50E+2
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	3.21E-1	3.32E-4	1.02E-4	3.22E-1	4.29E-4	4.00E-2	2.52E-4	-1.44E-1	2.19E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.26E-3	7.50E-6	1.91E-11	1.27E-3	9.70E-6	6.05E-5	2.50E-7	-1.97E-4	1.14E-3
NHWD	kg	1.80E+0	1.82E-1	7.39E-5	1.98E+0	2.35E-1	1.41E+0	9.43E-1	-7.41E-1	3.82E+0
RWD	kg	9.09E-4	1.99E-5	7.68E-12	9.28E-4	2.58E-5	1.40E-4	1.35E-6	-3.94E-4	7.02E-4
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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