Environmental Profile

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

Ecochain v3.5.80

Product:	3072523 - PVCU Double Coupler BR 200 SN4 FIN
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	2.64E+0	4.69E-2	1.45E-4	2.69E+0	3.35E-2	2.15E+0	1.16E-2	-1.59E+0	3.30E+0
GWP-f	kg CO2 eq	3.32E+0	4.69E-2	1.46E-4	3.36E+0	3.35E-2	1.37E+0	1.16E-2	-1.74E+0	3.04E+0
GWP-b	kg CO2 eq	-6.77E-1	2.85E-5	-1.54E-6	-6.77E-1	2.03E-5	7.72E-1	1.43E-5	1.59E-1	2.54E-1
GWP-luluc	kg CO2 eq	3.90E-3	1.66E-5	1.49E-7	3.91E-3	1.18E-5	4.07E-4	2.94E-7	-2.39E-3	1.94E-3
ODP	kg CFC11 eq	1.49E-6	1.08E-8	8.26E-12	1.50E-6	7.71E-9	1.14E-7	4.17E-10	-7.27E-7	8.98E-7
AP	mol H+ eq	1.62E-2	2.67E-4	1.47E-6	1.65E-2	1.91E-4	2.01E-3	1.02E-5	-6.73E-3	1.20E-2
EP-fw	kg P eq	1.49E-4	3.86E-7	8.24E-9	1.49E-4	2.75E-7	1.37E-5	1.33E-8	-6.95E-5	9.37E-5
EP-m	kg N eq	2.94E-3	9.55E-5	1.55E-7	3.04E-3	6.82E-5	5.08E-4	7.67E-6	-1.29E-3	2.33E-3
EP-T	mol N eq	3.20E-2	1.05E-3	1.85E-6	3.31E-2	7.52E-4	5.60E-3	4.06E-5	-1.41E-2	2.53E-2
POCP	kg NMVOC eq	1.10E-2	3.01E-4	6.28E-7	1.13E-2	2.15E-4	1.66E-3	1.40E-5	-4.73E-3	8.44E-3
ADP-mm	kg Sb eq	2.48E-3	1.21E-6	1.97E-8	2.48E-3	8.66E-7	7.73E-6	1.02E-8	-3.53E-5	2.46E-3
ADP-f	MJ	8.09E+1	7.19E-1	1.36E-3	8.16E+1	5.14E-1	5.27E+0	3.05E-2	-3.97E+1	4.78E+1
WDP	m3 depriv.	4.53E+0	2.21E-3	5.22E-5	4.53E+0	1.58E-3	2.07E-1	1.90E-4	-2.23E+0	2.51E+0
PM	disease inc.	1.35E-7	4.23E-9	9.08E-12	1.39E-7	3.02E-9	2.45E-8	2.10E-10	-6.20E-8	1.05E-7
IR	kBq U-235 eq	1.89E-1	3.14E-3	1.02E-6	1.92E-1	2.25E-3	1.87E-2	1.41E-4	-7.99E-2	1.33E-1
ETP-fw	CTUe	9.76E+1	5.84E-1	1.21E-2	9.82E+1	4.17E-1	4.04E+1	4.44E-1	-3.46E+1	1.05E+2
HTP-c	CTUh	2.82E-9	2.08E-11	6.17E-13	2.85E-9	1.48E-11	6.00E-10	8.38E-13	-1.08E-9	2.38E-9
HTP-nc	CTUh	8.16E-8	6.96E-10	1.57E-11	8.23E-8	4.97E-10	1.42E-8	8.65E-11	-3.05E-8	6.66E-8
SQP	Pt	7.70E+1	6.15E-1	2.24E-3	7.76E+1	4.40E-1	3.21E+0	7.81E-2	-8.28E+1	-1.49E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.04E+1	1.03E-2	2.40E-2	2.04E+1	7.37E-3	3.75E-1	1.17E-3	-1.43E+1	6.57E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.04E+1	1.03E-2	2.40E-2	2.04E+1	7.37E-3	3.75E-1	1.17E-3	-1.43E+1	6.57E+0
PENRE	MJ	8.67E+1	7.64E-1	1.44E-3	8.75E+1	5.45E-1	5.60E+0	3.24E-2	-4.28E+1	5.09E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.67E+1	7.64E-1	1.44E-3	8.75E+1	5.45E-1	5.60E+0	3.24E-2	-4.28E+1	5.09E+1
PET	MJ	1.07E+2	7.74E-1	2.55E-2	1.08E+2	5.53E-1	5.98E+0	3.35E-2	-5.70E+1	5.75E+1
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	5.68E-2	8.14E-5	1.46E-6	5.68E-2	5.81E-5	6.07E-3	3.75E-5	-2.78E-2	3.52E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.52E-4	1.84E-6	2.73E-13	3.54E-4	1.31E-6	8.94E-6	3.71E-8	-3.73E-5	3.27E-4
NHWD	kg	3.58E-1	4.46E-2	1.05E-6	4.02E-1	3.18E-2	2.03E-1	1.34E-1	-1.46E-1	6.25E-1
RWD	kg	1.84E-4	4.89E-6	1.10E-13	1.88E-4	3.49E-6	2.02E-5	1.99E-7	-7.35E-5	1.39E-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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777