

# Environmental Profile

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

Ecochain v3.5.80



Product: 3072535 - PVCU Branch 45° BR 315x315 SN4 UD FIN  
 Unit: 1 piece  
 Manufacturer: Wavin - PL -Buk - Extra products

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



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.

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

This document and supporting material contain confidential and proprietary business information of Wavin - PL -Buk - Extra products. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - PL -Buk - Extra products.

# Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.24E+1	4.20E-1	1.45E-4	3.28E+1	5.44E-1	2.87E+1	1.51E-1	-2.08E+1	4.15E+1
GWP-f	kg CO2 eq	4.32E+1	4.19E-1	1.46E-4	4.36E+1	5.43E-1	1.64E+1	1.50E-1	-2.32E+1	3.74E+1
GWP-b	kg CO2 eq	-1.09E+1	2.55E-4	-1.54E-6	-1.09E+1	3.30E-4	1.24E+1	1.93E-4	2.49E+0	3.99E+0
GWP-luluc	kg CO2 eq	5.01E-2	1.48E-4	1.49E-7	5.02E-2	1.92E-4	6.31E-3	4.10E-6	-3.53E-2	2.14E-2
ODP	kg CFC11 eq	2.08E-5	9.66E-8	8.26E-12	2.09E-5	1.25E-7	1.70E-6	6.18E-9	-1.02E-5	1.25E-5
AP	mol H+ eq	1.99E-1	2.39E-3	1.47E-6	2.02E-1	3.09E-3	3.10E-2	1.48E-4	-9.59E-2	1.40E-1
EP-fw	kg P eq	1.88E-3	3.45E-6	8.24E-9	1.89E-3	4.47E-6	2.10E-4	1.85E-7	-1.01E-3	1.09E-3
EP-m	kg N eq	3.69E-2	8.55E-4	1.55E-7	3.78E-2	1.11E-3	7.87E-3	9.38E-5	-1.83E-2	2.85E-2
EP-T	mol N eq	3.97E-1	9.42E-3	1.85E-6	4.06E-1	1.22E-2	8.67E-2	5.91E-4	-2.02E-1	3.04E-1
POCP	kg NMVOC eq	1.36E-1	2.69E-3	6.28E-7	1.38E-1	3.49E-3	2.60E-2	2.00E-4	-6.61E-2	1.02E-1
ADP-mm	kg Sb eq	1.62E-3	1.08E-5	1.97E-8	1.63E-3	1.40E-5	1.21E-4	1.46E-7	-4.53E-4	1.32E-3
ADP-f	MJ	1.06E+3	6.44E+0	1.36E-3	1.07E+3	8.34E+0	8.35E+1	4.47E-1	-5.38E+2	6.23E+2
WDP	m3 depriv.	6.21E+1	1.98E-2	5.22E-5	6.21E+1	2.56E-2	3.10E+0	2.53E-3	-3.22E+1	3.30E+1
PM	disease inc.	1.74E-6	3.79E-8	9.08E-12	1.78E-6	4.90E-8	3.94E-7	3.06E-9	-8.92E-7	1.33E-6
IR	kBq U-235 eq	2.30E+0	2.81E-2	1.02E-6	2.33E+0	3.64E-2	2.94E-1	2.05E-3	-1.14E+0	1.53E+0
ETP-fw	CTUe	1.03E+3	5.23E+0	1.21E-2	1.04E+3	6.77E+0	5.89E+2	6.39E+0	-5.18E+2	1.12E+3
HTP-c	CTUh	3.17E-8	1.86E-10	6.17E-13	3.19E-8	2.41E-10	9.51E-9	1.15E-11	-1.51E-8	2.66E-8
HTP-nc	CTUh	8.87E-7	6.23E-9	1.57E-11	8.94E-7	8.07E-9	2.15E-7	1.24E-9	-4.40E-7	6.79E-7
SQP	Pt	1.20E+3	5.51E+0	2.24E-3	1.20E+3	7.13E+0	5.27E+1	1.13E+0	-1.16E+3	1.00E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.48E+2	9.24E-2	2.40E-2	2.48E+2	1.20E-1	5.78E+0	1.60E-2	-2.05E+2	4.90E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.48E+2	9.24E-2	2.40E-2	2.48E+2	1.20E-1	5.78E+0	1.60E-2	-2.05E+2	4.90E+1
PENRE	MJ	1.14E+3	6.83E+0	1.44E-3	1.15E+3	8.85E+0	8.89E+1	4.74E-1	-5.79E+2	6.65E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.14E+3	6.83E+0	1.44E-3	1.15E+3	8.85E+0	8.89E+1	4.74E-1	-5.79E+2	6.65E+2
PET	MJ	1.39E+3	6.93E+0	2.55E-2	1.39E+3	8.97E+0	9.47E+1	4.90E-1	-7.84E+2	7.14E+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	7.24E-1	7.28E-4	1.46E-6	7.25E-1	9.43E-4	8.71E-2	5.47E-4	-4.04E-1	4.09E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.00E-4	1.65E-5	2.73E-13	9.17E-4	2.13E-5	1.39E-4	5.38E-7	-4.97E-4	5.80E-4
NHWD	kg	4.64E+0	3.99E-1	1.05E-6	5.04E+0	5.17E-1	3.25E+0	2.09E+0	-2.06E+0	8.84E+0
RWD	kg	2.16E-3	4.38E-5	1.10E-13	2.20E-3	5.67E-5	3.22E-4	2.93E-6	-1.03E-3	1.55E-3
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