Environmental Profile

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

Ecochain v3.5.80

Product:	3003159 - Wadal PVC Branch 45° GY 40 S/S/S
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

With Wadal you opt for a tensile-resistant system whose connections cannot slide apart. There is a solution for every indoor drainage situation, thanks to the very extensive range of PVC adhesive fittings and pipes. KOMO certified.

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	2.35E-1	3.28E-3	1.45E-4	2.38E-1	3.00E-3	1.33E-1	9.58E-4	-1.37E-1	2.39E-1
GWP-f	kg CO2 eq	2.65E-1	3.28E-3	1.46E-4	2.69E-1	3.00E-3	9.64E-2	9.57E-4	-1.43E-1	2.26E-1
GWP-b	kg CO2 eq	-3.08E-2	1.99E-6	-1.54E-6	-3.08E-2	1.82E-6	3.67E-2	1.20E-6	7.00E-3	1.28E-2
GWP-luluc	kg CO2 eq	2.82E-4	1.16E-6	1.49E-7	2.84E-4	1.06E-6	3.76E-5	2.54E-8	-1.54E-4	1.68E-4
ODP	kg CFC11 eq	1.29E-7	7.55E-10	8.26E-12	1.30E-7	6.91E-10	1.04E-8	3.55E-11	-6.63E-8	7.49E-8
AP	mol H+ eq	1.27E-3	1.87E-5	1.47E-6	1.29E-3	1.71E-5	1.78E-4	8.66E-7	-5.57E-4	9.34E-4
EP-fw	kg P eq	1.22E-5	2.70E-8	8.24E-9	1.23E-5	2.47E-8	1.26E-6	1.14E-9	-5.63E-6	7.91E-6
EP-m	kg N eq	2.26E-4	6.68E-6	1.55E-7	2.33E-4	6.11E-6	4.40E-5	5.32E-7	-1.02E-4	1.81E-4
EP-T	mol N eq	2.47E-3	7.36E-5	1.85E-6	2.54E-3	6.73E-5	4.85E-4	3.45E-6	-1.10E-3	2.00E-3
POCP	kg NMVOC eq	8.15E-4	2.10E-5	6.28E-7	8.37E-4	1.92E-5	1.45E-4	1.19E-6	-3.75E-4	6.27E-4
ADP-mm	kg Sb eq	2.48E-4	8.47E-8	1.97E-8	2.48E-4	7.75E-8	6.99E-7	8.72E-10	-2.75E-6	2.46E-4
ADP-f	MJ	6.44E+0	5.03E-2	1.36E-3	6.49E+0	4.60E-2	4.80E-1	2.60E-3	-3.38E+0	3.64E+0
WDP	m3 depriv.	4.01E-1	1.54E-4	5.22E-5	4.01E-1	1.41E-4	1.89E-2	1.84E-5	-1.98E-1	2.22E-1
PM	disease inc.	9.07E-9	2.96E-10	9.08E-12	9.37E-9	2.71E-10	2.20E-9	1.79E-11	-4.43E-9	7.44E-9
IR	kBq U-235 eq	1.42E-2	2.20E-4	1.02E-6	1.44E-2	2.01E-4	1.70E-3	1.19E-5	-6.70E-3	9.60E-3
ETP-fw	CTUe	7.57E+0	4.08E-2	1.21E-2	7.62E+0	3.74E-2	3.70E+0	4.08E-2	-2.51E+0	8.89E+0
HTP-c	CTUh	2.33E-10	1.45E-12	6.17E-13	2.35E-10	1.33E-12	5.58E-11	7.28E-14	-8.48E-11	2.07E-10
HTP-nc	CTUh	7.13E-9	4.87E-11	1.57E-11	7.20E-9	4.45E-11	1.30E-9	7.84E-12	-2.61E-9	5.94E-9
SQP	Pt	4.00E+0	4.30E-2	2.24E-3	4.05E+0	3.94E-2	2.94E-1	6.64E-3	-4.08E+0	3.05E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.32E+0	7.21E-4	2.40E-2	1.35E+0	6.60E-4	3.46E-2	9.61E-5	-7.41E-1	6.41E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.32E+0	7.21E-4	2.40E-2	1.35E+0	6.60E-4	3.46E-2	9.61E-5	-7.41E-1	6.41E-1
PENRE	MJ	6.90E+0	5.34E-2	1.44E-3	6.96E+0	4.88E-2	5.10E-1	2.76E-3	-3.64E+0	3.88E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.90E+0	5.34E-2	1.44E-3	6.96E+0	4.88E-2	5.10E-1	2.76E-3	-3.64E+0	3.88E+0
PET	MJ	8.23E+0	5.41E-2	2.55E-2	8.31E+0	4.95E-2	5.45E-1	2.85E-3	-4.38E+0	4.52E+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	4.71E-3	5.69E-6	1.46E-6	4.71E-3	5.21E-6	5.19E-4	3.17E-6	-2.27E-3	2.97E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.57E-5	1.29E-7	2.73E-13	3.58E-5	1.18E-7	7.87E-7	3.18E-9	-3.00E-6	3.37E-5
NHWD	kg	2.76E-2	3.12E-3	1.05E-6	3.08E-2	2.85E-3	1.80E-2	1.14E-2	-1.18E-2	5.12E-2
RWD	kg	1.24E-5	3.42E-7	1.10E-13	1.28E-5	3.13E-7	1.82E-6	1.69E-8	-6.02E-6	8.92E-6
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