Environmental Profile

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

Ecochain v3.5.80

Product:	3023397 - KANION PVC Gutter Uni.+Ins. 160 Graph.
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

Kanion gutters mean original design, elegance and aesthetics. They are designed to drain 100% of rainwater. It is safe to say that they are intended for the most demanding users.

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	1.12E+0	1.46E-2	1.45E-4	1.13E+0	1.26E-2	7.31E-1	4.11E-3	-6.21E-1	1.26E+0
GWP-f	kg CO2 eq	1.31E+0	1.45E-2	1.46E-4	1.32E+0	1.26E-2	4.99E-1	4.11E-3	-6.90E-1	1.15E+0
GWP-b	kg CO2 eq	-1.91E-1	8.83E-6	-1.54E-6	-1.91E-1	7.67E-6	2.32E-1	5.11E-6	6.98E-2	1.10E-1
GWP-luluc	kg CO2 eq	1.50E-3	5.15E-6	1.49E-7	1.50E-3	4.47E-6	1.59E-4	1.09E-7	-9.51E-4	7.16E-4
ODP	kg CFC11 eq	5.55E-7	3.35E-9	8.26E-12	5.59E-7	2.91E-9	4.43E-8	1.51E-10	-2.86E-7	3.20E-7
AP	mol H+ eq	6.32E-3	8.29E-5	1.47E-6	6.40E-3	7.19E-5	7.85E-4	3.69E-6	-2.65E-3	4.62E-3
EP-fw	kg P eq	5.81E-5	1.20E-7	8.24E-9	5.82E-5	1.04E-7	5.34E-6	4.88E-9	-2.78E-5	3.59E-5
EP-m	kg N eq	1.15E-3	2.96E-5	1.55E-7	1.18E-3	2.57E-5	1.99E-4	2.36E-6	-5.04E-4	9.03E-4
EP-T	mol N eq	1.24E-2	3.27E-4	1.85E-6	1.27E-2	2.84E-4	2.19E-3	1.47E-5	-5.50E-3	9.72E-3
POCP	kg NMVOC eq	4.21E-3	9.34E-5	6.28E-7	4.31E-3	8.11E-5	6.53E-4	5.07E-6	-1.85E-3	3.19E-3
ADP-mm	kg Sb eq	7.65E-4	3.76E-7	1.97E-8	7.65E-4	3.27E-7	3.05E-6	3.72E-9	-1.23E-5	7.57E-4
ADP-f	MJ	3.11E+1	2.23E-1	1.36E-3	3.13E+1	1.94E-1	2.07E+0	1.11E-2	-1.56E+1	1.80E+1
WDP	m3 depriv.	1.75E+0	6.85E-4	5.22E-5	1.75E+0	5.95E-4	7.96E-2	7.92E-5	-8.92E-1	9.39E-1
PM	disease inc.	5.10E-8	1.31E-9	9.08E-12	5.23E-8	1.14E-9	9.72E-9	7.61E-11	-2.41E-8	3.92E-8
IR	kBq U-235 eq	6.62E-2	9.76E-4	1.02E-6	6.72E-2	8.47E-4	7.36E-3	5.07E-5	-3.11E-2	4.44E-2
ETP-fw	CTUe	3.73E+1	1.81E-1	1.21E-2	3.75E+1	1.57E-1	1.55E+1	1.70E-1	-1.42E+1	3.92E+1
HTP-c	CTUh	1.18E-9	6.45E-12	6.17E-13	1.18E-9	5.60E-12	2.49E-10	3.11E-13	-4.04E-10	1.03E-9
HTP-nc	CTUh	3.22E-8	2.16E-10	1.57E-11	3.24E-8	1.88E-10	5.59E-9	3.28E-11	-1.03E-8	2.79E-8
SQP	Pt	2.40E+1	1.91E-1	2.24E-3	2.42E+1	1.66E-1	1.28E+0	2.83E-2	-2.86E+1	-2.92E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.49E+0	3.20E-3	2.40E-2	7.52E+0	2.78E-3	1.47E-1	4.10E-4	-5.05E+0	2.61E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.49E+0	3.20E-3	2.40E-2	7.52E+0	2.78E-3	1.47E-1	4.10E-4	-5.05E+0	2.61E+0
PENRE	MJ	3.34E+1	2.37E-1	1.44E-3	3.36E+1	2.06E-1	2.20E+0	1.17E-2	-1.68E+1	1.92E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.34E+1	2.37E-1	1.44E-3	3.36E+1	2.06E-1	2.20E+0	1.17E-2	-1.68E+1	1.92E+1
PET	MJ	4.09E+1	2.40E-1	2.55E-2	4.11E+1	2.09E-1	2.35E+0	1.21E-2	-2.19E+1	2.18E+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	2.19E-2	2.53E-5	1.46E-6	2.19E-2	2.19E-5	2.23E-3	1.35E-5	-1.12E-2	1.30E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.16E-4	5.71E-7	2.73E-13	1.17E-4	4.96E-7	3.48E-6	1.35E-8	-1.54E-5	1.05E-4
NHWD	kg	1.41E-1	1.38E-2	1.05E-6	1.55E-1	1.20E-2	8.14E-2	4.85E-2	-5.61E-2	2.41E-1
RWD	kg	6.09E-5	1.52E-6	1.10E-13	6.24E-5	1.32E-6	8.00E-6	7.18E-8	-2.84E-5	4.34E-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

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