Environmental Profile

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

Ecochain v3.5.80

Product:	3021691 - KANION PVC Reducer 110/90 Graphite S/S
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	5.66E-1	1.20E-2	2.73E-3	5.81E-1	5.13E-3	3.17E-1	1.71E-3	-2.31E-1	6.75E-1
GWP-f	kg CO2 eq	6.26E-1	1.20E-2	2.76E-3	6.41E-1	5.13E-3	2.13E-1	1.71E-3	-3.14E-1	5.47E-1
GWP-b	kg CO2 eq	-6.03E-2	7.30E-6	-2.91E-5	-6.03E-2	3.11E-6	1.04E-1	2.02E-6	8.41E-2	1.28E-1
GWP-luluc	kg CO2 eq	9.82E-4	4.25E-6	2.82E-6	9.89E-4	1.82E-6	6.33E-5	4.85E-8	-7.69E-4	2.85E-4
ODP	kg CFC11 eq	2.13E-7	2.77E-9	1.56E-10	2.16E-7	1.18E-9	1.76E-8	6.11E-11	-1.21E-7	1.14E-7
AP	mol H+ eq	3.17E-3	6.84E-5	2.79E-5	3.27E-3	2.92E-5	3.35E-4	1.51E-6	-1.33E-3	2.30E-3
EP-fw	kg P eq	2.93E-5	9.89E-8	1.56E-7	2.96E-5	4.22E-8	2.12E-6	2.12E-9	-1.61E-5	1.57E-5
EP-m	kg N eq	6.25E-4	2.45E-5	2.93E-6	6.52E-4	1.05E-5	8.90E-5	8.80E-7	-2.64E-4	4.89E-4
EP-T	mol N eq	6.67E-3	2.70E-4	3.50E-5	6.98E-3	1.15E-4	9.80E-4	5.97E-6	-2.91E-3	5.16E-3
POCP	kg NMVOC eq	2.08E-3	7.71E-5	1.19E-5	2.17E-3	3.29E-5	2.93E-4	2.07E-6	-9.15E-4	1.58E-3
ADP-mm	kg Sb eq	8.33E-4	3.11E-7	3.72E-7	8.34E-4	1.33E-7	1.31E-6	1.56E-9	-5.23E-6	8.30E-4
ADP-f	MJ	1.35E+1	1.84E-1	2.56E-2	1.37E+1	7.87E-2	8.69E-1	4.48E-3	-6.92E+0	7.77E+0
WDP	m3 depriv.	7.16E-1	5.66E-4	9.86E-4	7.17E-1	2.42E-4	3.07E-2	4.91E-5	-4.45E-1	3.03E-1
PM	disease inc.	2.62E-8	1.08E-9	1.72E-10	2.75E-8	4.63E-10	4.29E-9	3.09E-11	-1.48E-8	1.75E-8
IR	kBq U-235 eq	2.95E-2	8.06E-4	1.92E-5	3.03E-2	3.44E-4	3.11E-3	2.02E-5	-1.61E-2	1.77E-2
ETP-fw	CTUe	2.70E+1	1.50E-1	2.28E-1	2.74E+1	6.39E-2	5.91E+0	6.33E-2	-9.92E+0	2.35E+1
HTP-c	CTUh	6.11E-10	5.33E-12	1.16E-11	6.28E-10	2.28E-12	1.19E-10	1.38E-13	-1.93E-10	5.57E-10
HTP-nc	CTUh	1.70E-8	1.79E-10	2.96E-10	1.75E-8	7.62E-11	2.28E-9	1.24E-11	-5.38E-9	1.45E-8
SQP	Pt	1.10E+1	1.58E-1	4.23E-2	1.12E+1	6.74E-2	5.43E-1	1.14E-2	-2.06E+1	-8.81E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.51E+0	2.65E-3	4.54E-1	3.97E+0	1.13E-3	5.83E-2	1.56E-4	-3.71E+0	3.14E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.51E+0	2.65E-3	4.54E-1	3.97E+0	1.13E-3	5.83E-2	1.56E-4	-3.71E+0	3.14E-1
PENRE	MJ	1.45E+1	1.96E-1	2.73E-2	1.47E+1	8.36E-2	9.25E-1	4.76E-3	-7.46E+0	8.30E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.45E+1	1.96E-1	2.73E-2	1.47E+1	8.36E-2	9.25E-1	4.76E-3	-7.46E+0	8.30E+0
PET	MJ	1.80E+1	1.98E-1	4.81E-1	1.87E+1	8.47E-2	9.83E-1	4.92E-3	-1.12E+1	8.62E+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	1.02E-2	2.09E-5	2.76E-5	1.03E-2	8.91E-6	8.66E-4	5.40E-6	-6.65E-3	4.51E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.15E-4	4.72E-7	5.16E-12	1.15E-4	2.01E-7	1.52E-6	5.63E-9	-6.93E-6	1.10E-4
NHWD	kg	7.09E-2	1.14E-2	1.99E-5	8.24E-2	4.88E-3	3.56E-2	1.95E-2	-2.67E-2	1.16E-1
RWD	kg	2.66E-5	1.25E-6	2.07E-12	2.78E-5	5.35E-7	3.50E-6	2.89E-8	-1.48E-5	1.71E-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