

Environmental Profile

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

Ecochain v3.5.80



Product: 3001634 - KG Branch 45° DN300xDN150
Unit: 1 piece
Manufacturer: Wavin - NL - Hardenberg - Verified
Address: J.C. Kellerlaan 3
7772 SG Hardenberg
Netherlands

LCA standard: NMD Bepalingsmethode 1.1 (2022)
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



The Wavin KG sewer pipes and fittings are suitable for drain and underground sewer applications. This easy push-fit rubber ring jointing system is durable, corrosion free and light weight.

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 - NL - Hardenberg - Verified (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					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					D Reuse- Recovery- Recycling- potential											

Environmental impacts and parameters

ECI = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3--eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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]

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	1.57	0.03	0.08	1.68	0.02	0.45	0	-0.86	1.29
ADPE	kg Sb-eq	1.15E-2	6.87E-6	1.89E-5	1.15E-2	3.77E-6	3.40E-5	4.32E-8	-1.51E-4	1.14E-2
ADPF	kg Sb-eq	1.49E-1	1.98E-3	3.25E-3	1.54E-1	1.06E-3	1.18E-2	5.99E-5	-8.14E-2	8.59E-2
GWP	kg CO2-eq	1.26E+1	2.69E-1	6.17E-1	1.34E+1	1.45E-1	4.74E+0	4.15E-2	-7.23E+0	1.11E+1
ODP	kg CFC-11-eq	6.41E-6	4.77E-8	4.88E-8	6.50E-6	2.68E-8	4.90E-7	1.43E-9	-3.22E-6	3.80E-6
POCP	kg ethene-eq	8.84E-3	1.62E-4	2.68E-4	9.27E-3	8.68E-5	9.35E-4	1.07E-5	-4.64E-3	5.67E-3
AP	kg SO2-eq	5.20E-2	1.18E-3	2.65E-3	5.58E-2	6.22E-4	7.02E-3	3.23E-5	-2.47E-2	3.88E-2
EP	kg PO4 3--eq	6.57E-3	2.32E-4	3.41E-4	7.14E-3	1.24E-4	1.09E-3	1.40E-5	-3.36E-3	5.02E-3
HTP	kg 1,4-DB-eq	6.55E+0	1.13E-1	2.87E-1	6.95E+0	6.19E-2	1.76E+0	3.38E-3	-3.59E+0	5.19E+0
FAETP	kg 1,4-DB-eq	1.60E-1	3.31E-3	9.79E-3	1.73E-1	1.81E-3	2.68E-2	1.04E-3	-7.64E-2	1.27E-1
MAETP	kg 1,4-DB-eq	3.60E+2	1.19E+1	3.86E+1	4.11E+2	6.47E+0	8.99E+1	1.27E+0	-1.56E+2	3.53E+2
TETP	kg 1,4-DB-eq	4.08E-2	4.00E-4	2.13E-2	6.25E-2	2.19E-4	6.35E-3	1.14E-5	-2.20E-2	4.71E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	8.07E+0	2.71E-1	7.06E-1	9.05E+0	1.46E-1	9.66E+0	4.84E-2	-7.44E+0	1.15E+1
GWP-f	kg CO2 eq	1.29E+1	2.71E-1	5.43E-1	1.37E+1	1.46E-1	4.78E+0	4.84E-2	-7.40E+0	1.12E+1
GWP-b	kg CO2 eq	-4.80E+0	1.25E-4	1.12E-1	-4.69E+0	8.85E-5	4.88E+0	6.03E-5	-4.20E-2	1.56E-1
GWP-luluc	kg CO2 eq	1.33E-2	9.94E-5	5.15E-2	6.50E-2	5.16E-5	1.82E-3	1.25E-6	-7.05E-3	5.98E-2
ODP	kg CFC11 eq	6.36E-6	5.99E-8	5.74E-8	6.48E-6	3.36E-8	5.06E-7	1.77E-9	-3.20E-6	3.82E-6
AP	mol H+ eq	6.31E-2	1.57E-3	3.31E-3	6.79E-2	8.30E-4	8.84E-3	4.32E-5	-3.03E-2	4.73E-2
EP-fw	kg P eq	6.05E-4	2.74E-6	9.51E-6	6.17E-4	1.20E-6	6.09E-5	5.65E-8	-2.84E-4	3.95E-4
EP-m	kg N eq	1.12E-2	5.54E-4	7.82E-4	1.25E-2	2.97E-4	2.22E-3	2.97E-5	-5.81E-3	9.29E-3
EP-T	mol N eq	1.23E-1	6.11E-3	8.62E-3	1.38E-1	3.27E-3	2.45E-2	1.72E-4	-6.44E-2	1.02E-1
POCP	kg NMVOC eq	4.28E-2	1.74E-3	2.45E-3	4.70E-2	9.36E-4	7.25E-3	5.94E-5	-2.22E-2	3.31E-2
ADP-mm	kg Sb eq	1.15E-2	6.87E-6	1.89E-5	1.15E-2	3.77E-6	3.40E-5	4.32E-8	-1.51E-4	1.14E-2
ADP-f	MJ	3.15E+2	4.09E+0	6.07E+0	3.25E+2	2.24E+0	2.35E+1	1.29E-1	-1.69E+2	1.82E+2
WDP	m3 depriv.	1.92E+1	1.46E-2	4.70E+0	2.39E+1	6.87E-3	9.14E-1	8.29E-4	-9.06E+0	1.57E+1
PM	disease inc.	5.16E-7	2.44E-8	4.09E-8	5.81E-7	1.32E-8	1.08E-7	8.91E-10	-2.72E-7	4.31E-7
IR	kBq U-235 eq	7.54E-1	1.71E-2	9.65E-3	7.81E-1	9.78E-3	8.38E-2	5.97E-4	-3.43E-1	5.32E-1
ETP-fw	CTUe	3.29E+2	3.65E+0	1.41E+1	3.47E+2	1.82E+0	1.79E+2	1.97E+0	-1.24E+2	4.05E+2
HTP-c	CTUh	1.47E-8	1.18E-10	4.88E-10	1.53E-8	6.47E-11	2.67E-9	3.57E-12	-7.53E-9	1.05E-8
HTP-nc	CTUh	3.64E-7	3.99E-9	1.52E-8	3.83E-7	2.17E-9	6.25E-8	3.81E-10	-1.59E-7	2.90E-7
SQP	Pt	4.52E+2	3.55E+0	4.54E-1	4.56E+2	1.91E+0	1.45E+1	3.32E-1	-3.88E+2	8.41E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.48E+1	5.12E-2	2.95E+1	1.04E+2	3.21E-2	1.67E+0	4.89E-3	-6.53E+1	4.07E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.48E+1	5.12E-2	2.95E+1	1.04E+2	3.21E-2	1.67E+0	4.89E-3	-6.53E+1	4.07E+1
PENRE	MJ	3.38E+2	4.34E+0	6.56E+0	3.49E+2	2.38E+0	2.50E+1	1.37E-1	-1.82E+2	1.94E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.38E+2	4.34E+0	6.56E+0	3.49E+2	2.38E+0	2.50E+1	1.37E-1	-1.82E+2	1.94E+2
PET	MJ	4.13E+2	4.39E+0	3.61E+1	4.53E+2	2.41E+0	2.66E+1	1.42E-1	-2.47E+2	2.35E+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	2.26E-1	4.98E-4	1.11E-1	3.37E-1	2.53E-4	2.60E-2	1.59E-4	-1.02E-1	2.62E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.66E-3	1.04E-5	6.44E-6	1.68E-3	5.72E-6	3.91E-5	1.58E-7	-1.74E-4	1.55E-3
NHWD	kg	1.54E+0	2.59E-1	9.95E-3	1.81E+0	1.39E-1	8.80E-1	5.69E-1	-7.91E-1	2.61E+0
RWD	kg	6.99E-4	2.69E-5	1.19E-5	7.38E-4	1.52E-5	9.07E-5	8.43E-7	-3.15E-4	5.29E-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