

Environmental Profile

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

Ecochain v3.5.80



Product: 3009593 - KG Bend 15° DN200
 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

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

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 non-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 - NL - Hardenberg - Verified. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - NL - Hardenberg - Verified.

Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.3	0.01	0.01	0.33	0	0.09	0	-0.16	0.26
ADPE	kg Sb-eq	2.25E-3	1.27E-6	3.57E-6	2.25E-3	7.38E-7	6.56E-6	8.53E-9	-2.96E-5	2.23E-3
ADPF	kg Sb-eq	2.95E-2	3.66E-4	6.14E-4	3.05E-2	2.08E-4	2.29E-3	1.18E-5	-1.58E-2	1.72E-2
GWP	kg CO2-eq	2.46E+0	4.97E-2	1.17E-1	2.63E+0	2.83E-2	9.76E-1	8.24E-3	-1.40E+0	2.24E+0
ODP	kg CFC-11-eq	1.25E-6	8.82E-9	9.21E-9	1.27E-6	5.25E-9	9.50E-8	2.82E-10	-6.24E-7	7.45E-7
POCP	kg ethene-eq	1.74E-3	3.00E-5	5.06E-5	1.82E-3	1.70E-5	1.80E-4	2.12E-6	-8.67E-4	1.15E-3
AP	kg SO2-eq	1.02E-2	2.19E-4	5.01E-4	1.09E-2	1.22E-4	1.36E-3	6.37E-6	-4.69E-3	7.74E-3
EP	kg PO4 3--eq	1.28E-3	4.29E-5	6.44E-5	1.39E-3	2.43E-5	2.12E-4	2.85E-6	-6.29E-4	1.00E-3
HTP	kg 1,4-DB-eq	1.25E+0	2.09E-2	5.41E-2	1.32E+0	1.21E-2	3.41E-1	6.68E-4	-6.57E-1	1.02E+0
FAETP	kg 1,4-DB-eq	3.07E-2	6.11E-4	1.85E-3	3.31E-2	3.55E-4	5.22E-3	2.05E-4	-1.40E-2	2.49E-2
MAETP	kg 1,4-DB-eq	7.10E+1	2.20E+0	7.28E+0	8.05E+1	1.27E+0	1.75E+1	2.50E-1	-2.95E+1	6.99E+1
TETP	kg 1,4-DB-eq	7.76E-3	7.40E-5	4.02E-3	1.19E-2	4.29E-5	1.23E-3	2.26E-6	-4.07E-3	9.06E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.71E+0	5.02E-2	1.33E-1	1.89E+0	2.86E-2	1.81E+0	9.61E-3	-1.44E+0	2.30E+0
GWP-f	kg CO2 eq	2.52E+0	5.01E-2	1.02E-1	2.68E+0	2.85E-2	9.82E-1	9.61E-3	-1.43E+0	2.26E+0
GWP-b	kg CO2 eq	-8.15E-1	2.31E-5	2.11E-2	-7.94E-1	1.73E-5	8.30E-1	1.19E-5	-8.12E-3	2.85E-2
GWP-luluc	kg CO2 eq	2.56E-3	1.84E-5	9.73E-3	1.23E-2	1.01E-5	3.52E-4	2.46E-7	-1.30E-3	1.14E-2
ODP	kg CFC11 eq	1.24E-6	1.11E-8	1.08E-8	1.27E-6	6.58E-9	9.80E-8	3.50E-10	-6.21E-7	7.50E-7
AP	mol H+ eq	1.24E-2	2.91E-4	6.25E-4	1.33E-2	1.63E-4	1.71E-3	8.52E-6	-5.74E-3	9.45E-3
EP-fw	kg P eq	1.18E-4	5.06E-7	1.79E-6	1.20E-4	2.35E-7	1.18E-5	1.12E-8	-5.38E-5	7.83E-5
EP-m	kg N eq	2.18E-3	1.02E-4	1.48E-4	2.43E-3	5.82E-5	4.29E-4	6.04E-6	-1.09E-3	1.84E-3
EP-T	mol N eq	2.40E-2	1.13E-3	1.63E-3	2.68E-2	6.41E-4	4.73E-3	3.40E-5	-1.20E-2	2.02E-2
POCP	kg NMVOC eq	8.39E-3	3.22E-4	4.63E-4	9.18E-3	1.83E-4	1.40E-3	1.17E-5	-4.17E-3	6.61E-3
ADP-mm	kg Sb eq	2.25E-3	1.27E-6	3.57E-6	2.25E-3	7.38E-7	6.56E-6	8.53E-9	-2.96E-5	2.23E-3
ADP-f	MJ	6.23E+1	7.56E-1	1.15E+0	6.42E+1	4.38E-1	4.54E+0	2.56E-2	-3.28E+1	3.64E+1
WDP	m3 depriv.	3.75E+0	2.70E-3	8.86E-1	4.64E+0	1.34E-3	1.78E-1	1.63E-4	-1.75E+0	3.06E+0
PM	disease inc.	1.01E-7	4.50E-9	7.71E-9	1.13E-7	2.58E-9	2.08E-8	1.76E-10	-5.00E-8	8.65E-8
IR	kBq U-235 eq	1.50E-1	3.17E-3	1.82E-3	1.55E-1	1.92E-3	1.62E-2	1.18E-4	-6.55E-2	1.07E-1
ETP-fw	CTUe	6.42E+1	6.74E-1	2.66E+0	6.75E+1	3.56E-1	3.47E+1	3.84E-1	-2.32E+1	7.98E+1
HTP-c	CTUh	2.76E-9	2.19E-11	9.21E-11	2.87E-9	1.27E-11	5.15E-10	7.05E-13	-1.36E-9	2.04E-9
HTP-nc	CTUh	7.01E-8	7.37E-10	2.88E-9	7.37E-8	4.24E-10	1.21E-8	7.43E-11	-2.97E-8	5.66E-8
SQP	Pt	7.81E+1	6.56E-1	8.56E-2	7.89E+1	3.75E-1	2.80E+0	6.55E-2	-6.64E+1	1.57E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.31E+1	9.47E-3	5.57E+0	1.87E+1	6.29E-3	3.24E-1	9.70E-4	-1.13E+1	7.78E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.31E+1	9.47E-3	5.57E+0	1.87E+1	6.29E-3	3.24E-1	9.70E-4	-1.13E+1	7.78E+0
PENRE	MJ	6.68E+1	8.03E-1	1.24E+0	6.88E+1	4.65E-1	4.83E+0	2.71E-2	-3.53E+1	3.88E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.68E+1	8.03E-1	1.24E+0	6.88E+1	4.65E-1	4.83E+0	2.71E-2	-3.53E+1	3.88E+1
PET	MJ	7.99E+1	8.12E-1	6.81E+0	8.75E+1	4.71E-1	5.15E+0	2.81E-2	-4.66E+1	4.66E+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	4.45E-2	9.21E-5	2.10E-2	6.56E-2	4.96E-5	5.11E-3	3.14E-5	-1.96E-2	5.12E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.22E-4	1.92E-6	1.22E-6	3.26E-4	1.12E-6	7.57E-6	3.11E-8	-3.31E-5	3.01E-4
NHWD	kg	2.95E-1	4.80E-2	1.88E-3	3.45E-1	2.72E-2	1.71E-1	1.12E-1	-1.46E-1	5.09E-1
RWD	kg	1.40E-4	4.96E-6	2.25E-6	1.48E-4	2.98E-6	1.75E-5	1.66E-7	-6.00E-5	1.08E-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