Environmental Profile

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

Ecochain v3.5.80

Product:	3009552 - PVC KG Reducer GY 125x110 SN4 S/SP
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

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.

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

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 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 SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.07	0	0	0.07	0	0.02	0	-0.03	0.06
ADPE	kg Sb-eq	5.75E-4	2.04E-7	8.61E-7	5.76E-4	1.89E-7	1.67E-6	2.17E-9	-6.99E-6	5.71E-4
ADPF	kg Sb-eq	7.20E-3	5.88E-5	1.48E-4	7.40E-3	5.31E-5	5.77E-4	3.01E-6	-3.76E-3	4.28E-3
GWP	kg CO2-eq	5.95E-1	7.99E-3	2.81E-2	6.31E-1	7.24E-3	2.44E-1	2.10E-3	-3.26E-1	5.58E-1
ODP	kg CFC-11-eq	3.18E-7	1.42E-9	2.22E-9	3.21E-7	1.34E-9	2.41E-8	7.18E-11	-1.57E-7	1.89E-7
POCP	kg ethene-eq	3.70E-4	4.82E-6	1.22E-5	3.88E-4	4.34E-6	4.56E-5	5.39E-7	-1.64E-4	2.74E-4
AP	kg SO2-eq	2.43E-3	3.51E-5	1.21E-4	2.58E-3	3.12E-5	3.40E-4	1.62E-6	-1.07E-3	1.89E-3
EP	kg PO4 3−-eq	3.10E-4	6.90E-6	1.55E-5	3.32E-4	6.22E-6	5.24E-5	7.19E-7	-1.45E-4	2.47E-4
HTP	kg 1,4-DB-eq	2.36E-1	3.36E-3	1.30E-2	2.52E-1	3.10E-3	8.75E-2	1.70E-4	-1.02E-1	2.41E-1
FAETP	kg 1,4-DB-eq	6.97E-3	9.82E-5	4.46E-4	7.51E-3	9.07E-5	1.34E-3	5.22E-5	-2.84E-3	6.15E-3
MAETP	kg 1,4-DB-eq	1.69E+1	3.53E-1	1.76E+0	1.90E+1	3.24E-1	4.60E+0	6.37E-2	-6.57E+0	1.74E+1
TETP	kg 1,4-DB-eq	1.66E-3	1.19E-5	9.70E-4	2.64E-3	1.10E-5	3.14E-4	5.75E-7	-9.48E-4	2.01E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.14E-1	8.06E-3	3.21E-2	6.54E-1	7.30E-3	2.57E-1	2.45E-3	-3.08E-1	6.14E-1
GWP-f	kg CO2 eq	6.09E-1	8.06E-3	2.47E-2	6.42E-1	7.30E-3	2.45E-1	2.44E-3	-3.33E-1	5.63E-1
GWP-b	kg CO2 eq	4.69E-3	3.72E-6	5.10E-3	9.79E-3	4.43E-6	1.20E-2	3.04E-6	2.58E-2	4.77E-2
GWP-luluc	kg CO2 eq	6.72E-4	2.95E-6	2.34E-3	3.02E-3	2.58E-6	8.96E-5	6.28E-8	-3.91E-4	2.72E-3
ODP	kg CFC11 eq	3.16E-7	1.78E-9	2.61E-9	3.20E-7	1.68E-9	2.49E-8	8.92E-11	-1.56E-7	1.91E-7
AP	mol H+ eq	2.95E-3	4.67E-5	1.51E-4	3.15E-3	4.16E-5	4.27E-4	2.17E-6	-1.29E-3	2.33E-3
EP-fw	kg P eq	2.88E-5	8.13E-8	4.33E-7	2.93E-5	6.00E-8	3.00E-6	2.84E-9	-1.36E-5	1.87E-5
EP-m	kg N eq	5.23E-4	1.65E-5	3.56E-5	5.75E-4	1.49E-5	1.05E-4	1.52E-6	-2.32E-4	4.64E-4
EP-T	mol N eq	5.66E-3	1.82E-4	3.92E-4	6.24E-3	1.64E-4	1.16E-3	8.66E-6	-2.50E-3	5.07E-3
POCP	kg NMVOC eq	1.88E-3	5.18E-5	1.12E-4	2.04E-3	4.69E-5	3.46E-4	2.99E-6	-8.34E-4	1.60E-3
ADP-mm	kg Sb eq	5.75E-4	2.04E-7	8.61E-7	5.76E-4	1.89E-7	1.67E-6	2.17E-9	-6.99E-6	5.71E-4
ADP-f	MJ	1.53E+1	1.22E-1	2.76E-1	1.57E+1	1.12E-1	1.14E+0	6.52E-3	-7.88E+0	9.06E+0
WDP	m3 depriv.	9.51E-1	4.35E-4	2.14E-1	1.17E+0	3.44E-4	4.55E-2	4.15E-5	-4.77E-1	7.35E-1
PM	disease inc.	2.15E-8	7.24E-10	1.86E-9	2.41E-8	6.59E-10	5.23E-9	4.48E-11	-9.98E-9	2.00E-8
IR	kBq U-235 eq	3.61E-2	5.09E-4	4.39E-4	3.71E-2	4.90E-4	4.04E-3	3.00E-5	-1.60E-2	2.57E-2
ETP-fw	CTUe	1.82E+1	1.08E-1	6.41E-1	1.90E+1	9.10E-2	8.91E+0	9.83E-2	-6.34E+0	2.17E+1
HTP-c	CTUh	4.89E-10	3.51E-12	2.22E-11	5.15E-10	3.24E-12	1.27E-10	1.80E-13	-1.78E-10	4.67E-10
HTP-nc	CTUh	1.59E-8	1.19E-10	6.93E-10	1.67E-8	1.08E-10	3.09E-9	1.90E-11	-6.11E-9	1.39E-8
SQP	Pt	3.22E+0	1.05E-1	2.06E-2	3.35E+0	9.58E-2	6.95E-1	1.67E-2	-5.80E+0	-1.64E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.80E-1	1.52E-3	1.34E+0	2.32E+0	1.61E-3	8.24E-2	2.47E-4	-1.23E+0	1.18E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.80E-1	1.52E-3	1.34E+0	2.32E+0	1.61E-3	8.24E-2	2.47E-4	-1.23E+0	1.18E+0
PENRE	MJ	1.64E+1	1.29E-1	2.98E-1	1.68E+1	1.19E-1	1.21E+0	6.91E-3	-8.49E+0	9.66E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.64E+1	1.29E-1	2.98E-1	1.68E+1	1.19E-1	1.21E+0	6.91E-3	-8.49E+0	9.66E+0
PET	MJ	1.74E+1	1.31E-1	1.64E+0	1.91E+1	1.21E-1	1.30E+0	7.16E-3	-9.72E+0	1.08E+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	1.11E-2	1.48E-5	5.05E-3	1.62E-2	1.27E-5	1.29E-3	7.99E-6	-5.62E-3	1.19E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.07E-5	3.08E-7	2.93E-7	8.13E-5	2.86E-7	1.89E-6	7.92E-9	-6.77E-6	7.67E-5
NHWD	kg	6.30E-2	7.71E-3	4.53E-4	7.12E-2	6.94E-3	4.21E-2	2.86E-2	-2.56E-2	1.23E-1
RWD	kg	3.35E-5	7.98E-7	5.43E-7	3.48E-5	7.62E-7	4.33E-6	4.24E-8	-1.43E-5	2.56E-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

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