Environmental Profile

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

Ecochain v3.5.80

Product:	3001644 - KG Reducer DN125xDN100 EXP
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	5.91E-4	2.13E-7	8.80E-7	5.92E-4	1.94E-7	1.73E-6	2.24E-9	-7.22E-6	5.87E-4
ADPF	kg Sb-eq	7.43E-3	6.13E-5	1.51E-4	7.64E-3	5.47E-5	5.97E-4	3.10E-6	-3.89E-3	4.41E-3
GWP	kg CO2-eq	6.17E-1	8.33E-3	2.87E-2	6.54E-1	7.45E-3	2.50E-1	2.15E-3	-3.39E-1	5.75E-1
ODP	kg CFC-11-eq	3.27E-7	1.48E-9	2.27E-9	3.31E-7	1.38E-9	2.49E-8	7.38E-11	-1.62E-7	1.95E-7
POCP	kg ethene-eq	3.82E-4	5.03E-6	1.25E-5	4.00E-4	4.47E-6	4.74E-5	5.54E-7	-1.71E-4	2.81E-4
AP	kg SO2-eq	2.52E-3	3.66E-5	1.23E-4	2.68E-3	3.21E-5	3.52E-4	1.67E-6	-1.12E-3	1.94E-3
EP	kg PO4 3−-eq	3.25E-4	7.20E-6	1.59E-5	3.48E-4	6.40E-6	5.44E-5	7.37E-7	-1.55E-4	2.54E-4
HTP	kg 1,4-DB-eq	2.44E-1	3.51E-3	1.33E-2	2.61E-1	3.19E-3	9.05E-2	1.75E-4	-1.06E-1	2.48E-1
FAETP	kg 1,4-DB-eq	7.40E-3	1.02E-4	4.56E-4	7.95E-3	9.33E-5	1.38E-3	5.37E-5	-3.10E-3	6.38E-3
MAETP	kg 1,4-DB-eq	1.75E+1	3.68E-1	1.79E+0	1.97E+1	3.33E-1	4.79E+0	6.55E-2	-6.87E+0	1.80E+1
TETP	kg 1,4-DB-eq	1.73E-3	1.24E-5	9.92E-4	2.73E-3	1.13E-5	3.23E-4	5.91E-7	-1.03E-3	2.03E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.37E-1	8.41E-3	3.29E-2	6.78E-1	7.51E-3	2.67E-1	2.51E-3	-3.13E-1	6.41E-1
GWP-f	kg CO2 eq	6.31E-1	8.41E-3	2.53E-2	6.65E-1	7.51E-3	2.51E-1	2.51E-3	-3.46E-1	5.80E-1
GWP-b	kg CO2 eq	4.95E-3	3.88E-6	5.21E-3	1.02E-2	4.56E-6	1.51E-2	3.12E-6	3.28E-2	5.80E-2
GWP-luluc	kg CO2 eq	7.25E-4	3.08E-6	2.40E-3	3.13E-3	2.66E-6	9.24E-5	6.46E-8	-4.46E-4	2.77E-3
ODP	kg CFC11 eq	3.25E-7	1.86E-9	2.67E-9	3.30E-7	1.73E-9	2.57E-8	9.16E-11	-1.61E-7	1.96E-7
AP	mol H+ eq	3.06E-3	4.87E-5	1.54E-4	3.27E-3	4.28E-5	4.42E-4	2.23E-6	-1.36E-3	2.39E-3
EP-fw	kg P eq	2.99E-5	8.48E-8	4.42E-7	3.05E-5	6.18E-8	3.10E-6	2.92E-9	-1.46E-5	1.91E-5
EP-m	kg N eq	5.48E-4	1.72E-5	3.64E-5	6.01E-4	1.53E-5	1.09E-4	1.56E-6	-2.46E-4	4.82E-4
EP-T	mol N eq	5.91E-3	1.89E-4	4.01E-4	6.50E-3	1.69E-4	1.21E-3	8.90E-6	-2.65E-3	5.24E-3
POCP	kg NMVOC eq	1.95E-3	5.41E-5	1.14E-4	2.12E-3	4.82E-5	3.59E-4	3.07E-6	-8.78E-4	1.65E-3
ADP-mm	kg Sb eq	5.91E-4	2.13E-7	8.80E-7	5.92E-4	1.94E-7	1.73E-6	2.24E-9	-7.22E-6	5.87E-4
ADP-f	MJ	1.58E+1	1.27E-1	2.82E-1	1.62E+1	1.15E-1	1.18E+0	6.70E-3	-8.16E+0	9.32E+0
WDP	m3 depriv.	9.81E-1	4.53E-4	2.18E-1	1.20E+0	3.54E-4	4.69E-2	4.28E-5	-5.00E-1	7.47E-1
PM	disease inc.	2.25E-8	7.55E-10	1.90E-9	2.52E-8	6.78E-10	5.43E-9	4.61E-11	-1.09E-8	2.05E-8
IR	kBq U-235 eq	3.74E-2	5.31E-4	4.49E-4	3.83E-2	5.04E-4	4.18E-3	3.09E-5	-1.68E-2	2.62E-2
ETP-fw	CTUe	1.95E+1	1.13E-1	6.56E-1	2.03E+1	9.36E-2	9.18E+0	1.01E-1	-7.00E+0	2.26E+1
HTP-c	CTUh	5.06E-10	3.67E-12	2.27E-11	5.32E-10	3.33E-12	1.31E-10	1.85E-13	-1.86E-10	4.81E-10
HTP-nc	CTUh	1.65E-8	1.24E-10	7.09E-10	1.73E-8	1.12E-10	3.19E-9	1.96E-11	-6.41E-9	1.42E-8
SQP	Pt	3.55E+0	1.10E-1	2.11E-2	3.69E+0	9.86E-2	7.19E-1	1.72E-2	-7.07E+0	-2.55E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.06E+0	1.59E-3	1.37E+0	2.43E+0	1.65E-3	8.50E-2	2.54E-4	-1.46E+0	1.06E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.06E+0	1.59E-3	1.37E+0	2.43E+0	1.65E-3	8.50E-2	2.54E-4	-1.46E+0	1.06E+0
PENRE	MJ	1.69E+1	1.35E-1	3.05E-1	1.73E+1	1.22E-1	1.26E+0	7.11E-3	-8.79E+0	9.94E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.69E+1	1.35E-1	3.05E-1	1.73E+1	1.22E-1	1.26E+0	7.11E-3	-8.79E+0	9.94E+0
PET	MJ	1.80E+1	1.36E-1	1.68E+0	1.98E+1	1.24E-1	1.34E+0	7.36E-3	-1.03E+1	1.10E+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	1.15E-2	1.54E-5	5.16E-3	1.67E-2	1.30E-5	1.33E-3	8.21E-6	-6.02E-3	1.20E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.32E-5	3.21E-7	3.00E-7	8.38E-5	2.95E-7	1.96E-6	8.15E-9	-7.04E-6	7.90E-5
NHWD	kg	6.58E-2	8.04E-3	4.63E-4	7.43E-2	7.14E-3	4.35E-2	2.94E-2	-2.68E-2	1.28E-1
RWD	kg	3.46E-5	8.32E-7	5.56E-7	3.59E-5	7.84E-7	4.49E-6	4.36E-8	-1.51E-5	2.62E-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