Environmental Profile

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

Ecochain v3.5.80

Product:	3001567 - KG Double Socket Coupler DN200 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	0.28	0	0.01	0.3	0	0.1	0	-0.13	0.27
ADPE	kg Sb-eq	2.19E-3	8.31E-7	3.14E-6	2.19E-3	7.18E-7	6.31E-6	8.59E-9	-2.92E-5	2.17E-3
ADPF	kg Sb-eq	3.01E-2	2.39E-4	5.39E-4	3.09E-2	2.02E-4	2.16E-3	1.19E-5	-1.49E-2	1.84E-2
GWP	kg CO2-eq	2.49E+0	3.25E-2	1.02E-1	2.62E+0	2.75E-2	1.13E+0	8.50E-3	-1.33E+0	2.46E+0
ODP	kg CFC-11-eq	1.21E-6	5.77E-9	8.09E-9	1.23E-6	5.11E-9	8.94E-8	2.84E-10	-5.89E-7	7.33E-7
POCP	kg ethene-eq	1.67E-3	1.96E-5	4.44E-5	1.74E-3	1.65E-5	1.74E-4	2.17E-6	-6.52E-4	1.28E-3
AP	kg SO2-eq	1.03E-2	1.43E-4	4.40E-4	1.09E-2	1.19E-4	1.30E-3	6.42E-6	-4.28E-3	8.05E-3
EP	kg PO4 3−-eq	1.36E-3	2.81E-5	5.65E-5	1.44E-3	2.37E-5	2.06E-4	3.21E-6	-6.29E-4	1.05E-3
HTP	kg 1,4-DB-eq	9.95E-1	1.37E-2	4.75E-2	1.06E+0	1.18E-2	3.27E-1	6.72E-4	-4.02E-1	9.93E-1
FAETP	kg 1,4-DB-eq	3.10E-2	4.00E-4	1.62E-3	3.30E-2	3.45E-4	5.07E-3	2.05E-4	-1.29E-2	2.57E-2
MAETP	kg 1,4-DB-eq	7.25E+1	1.44E+0	6.39E+0	8.03E+1	1.23E+0	1.77E+1	2.50E-1	-2.59E+1	7.36E+1
TETP	kg 1,4-DB-eq	6.72E-3	4.84E-5	3.53E-3	1.03E-2	4.17E-5	1.17E-3	2.28E-6	-4.30E-3	7.21E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.56E+0	3.28E-2	1.17E-1	2.71E+0	2.78E-2	1.22E+0	9.92E-3	-1.18E+0	2.79E+0
GWP-f	kg CO2 eq	2.54E+0	3.28E-2	8.99E-2	2.67E+0	2.78E-2	1.14E+0	9.92E-3	-1.36E+0	2.49E+0
GWP-b	kg CO2 eq	1.39E-2	1.51E-5	1.86E-2	3.25E-2	1.69E-5	8.10E-2	1.21E-5	1.80E-1	2.93E-1
GWP-luluc	kg CO2 eq	3.12E-3	1.20E-5	8.54E-3	1.17E-2	9.83E-6	3.30E-4	2.48E-7	-2.03E-3	9.98E-3
ODP	kg CFC11 eq	1.22E-6	7.24E-9	9.50E-9	1.23E-6	6.40E-9	9.23E-8	3.52E-10	-5.85E-7	7.48E-7
AP	mol H+ eq	1.26E-2	1.90E-4	5.48E-4	1.33E-2	1.58E-4	1.64E-3	8.60E-6	-5.21E-3	9.93E-3
EP-fw	kg P eq	1.18E-4	3.31E-7	1.58E-6	1.20E-4	2.29E-7	1.11E-5	1.13E-8	-5.74E-5	7.42E-5
EP-m	kg N eq	2.27E-3	6.70E-5	1.30E-4	2.47E-3	5.66E-5	4.13E-4	6.84E-6	-9.66E-4	1.98E-3
EP-T	mol N eq	2.45E-2	7.39E-4	1.43E-3	2.67E-2	6.24E-4	4.55E-3	3.43E-5	-1.05E-2	2.14E-2
POCP	kg NMVOC eq	8.27E-3	2.11E-4	4.06E-4	8.89E-3	1.78E-4	1.35E-3	1.19E-5	-3.41E-3	7.02E-3
ADP-mm	kg Sb eq	2.19E-3	8.31E-7	3.14E-6	2.19E-3	7.18E-7	6.31E-6	8.59E-9	-2.92E-5	2.17E-3
ADP-f	MJ	6.38E+1	4.94E-1	1.01E+0	6.53E+1	4.26E-1	4.28E+0	2.58E-2	-3.12E+1	3.88E+1
WDP	m3 depriv.	3.65E+0	1.77E-3	7.78E-1	4.43E+0	1.31E-3	1.69E-1	1.61E-4	-1.87E+0	2.73E+0
PM	disease inc.	1.02E-7	2.94E-9	6.77E-9	1.12E-7	2.51E-9	1.99E-8	1.77E-10	-4.51E-8	8.93E-8
IR	kBq U-235 eq	1.57E-1	2.07E-3	1.60E-3	1.60E-1	1.86E-3	1.52E-2	1.19E-4	-6.47E-2	1.13E-1
ETP-fw	CTUe	8.23E+1	4.41E-1	2.34E+0	8.51E+1	3.46E-1	3.30E+1	3.62E-1	-2.98E+1	8.90E+1
HTP-c	CTUh	1.95E-9	1.43E-11	8.08E-11	2.05E-9	1.23E-11	4.77E-10	7.08E-13	-7.06E-10	1.83E-9
HTP-nc	CTUh	6.24E-8	4.82E-10	2.52E-9	6.54E-8	4.13E-10	1.16E-8	7.10E-11	-2.41E-8	5.33E-8
SQP	Pt	1.66E+1	4.29E-1	7.52E-2	1.71E+1	3.65E-1	2.60E+0	6.59E-2	-3.65E+1	-1.64E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.56E+0	6.19E-3	4.89E+0	9.45E+0	6.12E-3	3.05E-1	9.93E-4	-7.25E+0	2.51E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.56E+0	6.19E-3	4.89E+0	9.45E+0	6.12E-3	3.05E-1	9.93E-4	-7.25E+0	2.51E+0
PENRE	MJ	6.83E+1	5.25E-1	1.09E+0	6.99E+1	4.53E-1	4.56E+0	2.73E-2	-3.37E+1	4.13E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.83E+1	5.25E-1	1.09E+0	6.99E+1	4.53E-1	4.56E+0	2.73E-2	-3.37E+1	4.13E+1
PET	MJ	7.29E+1	5.31E-1	5.98E+0	7.94E+1	4.59E-1	4.86E+0	2.83E-2	-4.09E+1	4.38E+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	4.56E-2	6.02E-5	1.84E-2	6.41E-2	4.82E-5	5.05E-3	3.16E-5	-2.39E-2	4.53E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.99E-4	1.25E-6	1.07E-6	3.02E-4	1.09E-6	7.33E-6	3.13E-8	-2.77E-5	2.83E-4
NHWD	kg	2.68E-1	3.14E-2	1.65E-3	3.01E-1	2.64E-2	1.63E-1	1.13E-1	-1.01E-1	5.02E-1
RWD	kg	1.55E-4	3.25E-6	1.98E-6	1.60E-4	2.90E-6	1.64E-5	1.68E-7	-5.87E-5	1.20E-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

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