Environmental Profile

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

Ecochain v3.5.80

Product:	3001566 - KG Double Socket Coupler BR DN150 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

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.14	0	0.01	0.15	0	0.05	0	-0.06	0.14
ADPE	kg Sb-eq	1.11E-3	4.06E-7	1.86E-6	1.11E-3	3.64E-7	3.09E-6	4.41E-9	-1.49E-5	1.10E-3
ADPF	kg Sb-eq	1.54E-2	1.17E-4	3.20E-4	1.59E-2	1.03E-4	1.07E-3	6.11E-6	-7.48E-3	9.55E-3
GWP	kg CO2-eq	1.25E+0	1.59E-2	6.08E-2	1.33E+0	1.40E-2	6.04E-1	4.40E-3	-6.62E-1	1.29E+0
ODP	kg CFC-11-eq	6.11E-7	2.82E-9	4.80E-9	6.19E-7	2.59E-9	4.44E-8	1.46E-10	-2.93E-7	3.72E-7
POCP	kg ethene-eq	8.70E-4	9.58E-6	2.64E-5	9.06E-4	8.39E-6	8.49E-5	1.12E-6	-3.15E-4	6.86E-4
AP	kg SO2-eq	5.25E-3	6.98E-5	2.61E-4	5.58E-3	6.01E-5	6.41E-4	3.30E-6	-2.02E-3	4.26E-3
EP	kg PO4 3−-eq	6.66E-4	1.37E-5	3.36E-5	7.14E-4	1.20E-5	1.02E-4	1.70E-6	-2.79E-4	5.50E-4
HTP	kg 1,4-DB-eq	5.06E-1	6.68E-3	2.82E-2	5.41E-1	5.98E-3	1.61E-1	3.45E-4	-1.92E-1	5.16E-1
FAETP	kg 1,4-DB-eq	1.46E-2	1.95E-4	9.64E-4	1.58E-2	1.75E-4	2.49E-3	1.05E-4	-5.46E-3	1.31E-2
MAETP	kg 1,4-DB-eq	3.69E+1	7.02E-1	3.80E+0	4.14E+1	6.25E-1	8.54E+0	1.28E-1	-1.24E+1	3.83E+1
TETP	kg 1,4-DB-eq	3.29E-3	2.36E-5	2.10E-3	5.41E-3	2.12E-5	5.84E-4	1.17E-6	-1.81E-3	4.21E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.29E+0	1.60E-2	6.96E-2	1.38E+0	1.41E-2	6.32E-1	5.13E-3	-6.22E-1	1.40E+0
GWP-f	kg CO2 eq	1.28E+0	1.60E-2	5.35E-2	1.35E+0	1.41E-2	6.07E-1	5.13E-3	-6.76E-1	1.30E+0
GWP-b	kg CO2 eq	5.72E-3	7.39E-6	1.10E-2	1.68E-2	8.55E-6	2.50E-2	6.21E-6	5.42E-2	9.60E-2
GWP-luluc	kg CO2 eq	1.40E-3	5.87E-6	5.07E-3	6.48E-3	4.99E-6	1.65E-4	1.28E-7	-7.68E-4	5.88E-3
ODP	kg CFC11 eq	6.15E-7	3.53E-9	5.65E-9	6.24E-7	3.25E-9	4.58E-8	1.81E-10	-2.92E-7	3.81E-7
AP	mol H+ eq	6.37E-3	9.28E-5	3.26E-4	6.79E-3	8.02E-5	8.07E-4	4.41E-6	-2.46E-3	5.22E-3
EP-fw	kg P eq	5.84E-5	1.61E-7	9.36E-7	5.95E-5	1.16E-7	5.53E-6	5.79E-9	-2.57E-5	3.95E-5
EP-m	kg N eq	1.11E-3	3.27E-5	7.70E-5	1.22E-3	2.87E-5	2.03E-4	3.64E-6	-4.49E-4	1.01E-3
EP-T	mol N eq	1.21E-2	3.61E-4	8.49E-4	1.34E-2	3.16E-4	2.23E-3	1.76E-5	-4.85E-3	1.11E-2
POCP	kg NMVOC eq	4.21E-3	1.03E-4	2.42E-4	4.55E-3	9.04E-5	6.61E-4	6.11E-6	-1.61E-3	3.69E-3
ADP-mm	kg Sb eq	1.11E-3	4.06E-7	1.86E-6	1.11E-3	3.64E-7	3.09E-6	4.41E-9	-1.49E-5	1.10E-3
ADP-f	MJ	3.26E+1	2.41E-1	5.97E-1	3.34E+1	2.16E-1	2.12E+0	1.32E-2	-1.56E+1	2.02E+1
WDP	m3 depriv.	1.84E+0	8.64E-4	4.62E-1	2.30E+0	6.64E-4	8.50E-2	8.20E-5	-8.84E-1	1.50E+0
PM	disease inc.	5.13E-8	1.44E-9	4.02E-9	5.68E-8	1.27E-9	9.74E-9	9.09E-11	-1.93E-8	4.85E-8
IR	kBq U-235 eq	8.05E-2	1.01E-3	9.50E-4	8.25E-2	9.45E-4	7.47E-3	6.13E-5	-3.03E-2	6.06E-2
ETP-fw	CTUe	3.77E+1	2.15E-1	1.39E+0	3.93E+1	1.76E-1	1.65E+1	1.82E-1	-1.23E+1	4.39E+1
HTP-c	CTUh	9.83E-10	6.98E-12	4.80E-11	1.04E-9	6.25E-12	2.34E-10	3.63E-13	-3.34E-10	9.45E-10
HTP-nc	CTUh	3.13E-8	2.35E-10	1.50E-9	3.30E-8	2.09E-10	5.76E-9	3.58E-11	-1.14E-8	2.76E-8
SQP	Pt	7.14E+0	2.09E-1	4.47E-2	7.40E+0	1.85E-1	1.29E+0	3.38E-2	-1.19E+1	-2.98E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.03E+0	3.02E-3	2.90E+0	4.94E+0	3.10E-3	1.52E-1	5.12E-4	-2.47E+0	2.62E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.03E+0	3.02E-3	2.90E+0	4.94E+0	3.10E-3	1.52E-1	5.12E-4	-2.47E+0	2.62E+0
PENRE	MJ	3.49E+1	2.56E-1	6.46E-1	3.58E+1	2.30E-1	2.25E+0	1.40E-2	-1.68E+1	2.15E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.49E+1	2.56E-1	6.46E-1	3.58E+1	2.30E-1	2.25E+0	1.40E-2	-1.68E+1	2.15E+1
PET	MJ	3.69E+1	2.59E-1	3.55E+0	4.07E+1	2.33E-1	2.41E+0	1.45E-2	-1.93E+1	2.41E+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	2.31E-2	2.94E-5	1.09E-2	3.40E-2	2.45E-5	2.57E-3	1.62E-5	-1.07E-2	2.60E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.50E-4	6.12E-7	6.34E-7	1.51E-4	5.53E-7	3.62E-6	1.61E-8	-1.37E-5	1.42E-4
NHWD	kg	1.33E-1	1.53E-2	9.80E-4	1.49E-1	1.34E-2	8.11E-2	5.81E-2	-4.79E-2	2.54E-1
RWD	kg	8.06E-5	1.59E-6	1.18E-6	8.33E-5	1.47E-6	8.04E-6	8.62E-8	-2.75E-5	6.54E-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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