Environmental Profile

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

Ecochain v3.5.80

Product:	3001564 - KG Double Socket Coupler BR DN100 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	0.06	0	0	0.06	0	0.02	0	-0.03	0.06
ADPE	kg Sb-eq	4.49E-4	1.61E-7	6.36E-7	4.49E-4	1.47E-7	1.24E-6	1.78E-9	-5.96E-6	4.45E-4
ADPF	kg Sb-eq	6.17E-3	4.65E-5	1.09E-4	6.33E-3	4.15E-5	4.32E-4	2.46E-6	-3.00E-3	3.80E-3
GWP	kg CO2-eq	5.01E-1	6.32E-3	2.07E-2	5.28E-1	5.65E-3	2.41E-1	1.77E-3	-2.65E-1	5.12E-1
ODP	kg CFC-11-eq	2.47E-7	1.12E-9	1.64E-9	2.49E-7	1.05E-9	1.80E-8	5.88E-11	-1.19E-7	1.50E-7
POCP	kg ethene-eq	3.47E-4	3.81E-6	9.01E-6	3.59E-4	3.39E-6	3.40E-5	4.50E-7	-1.25E-4	2.72E-4
AP	kg SO2-eq	2.09E-3	2.78E-5	8.92E-5	2.21E-3	2.43E-5	2.58E-4	1.33E-6	-8.02E-4	1.69E-3
EP	kg PO4 3−-eq	2.63E-4	5.46E-6	1.15E-5	2.80E-4	4.86E-6	4.08E-5	6.82E-7	-1.08E-4	2.18E-4
HTP	kg 1,4-DB-eq	2.02E-1	2.66E-3	9.64E-3	2.14E-1	2.42E-3	6.51E-2	1.39E-4	-7.66E-2	2.05E-1
FAETP	kg 1,4-DB-eq	5.71E-3	7.77E-5	3.29E-4	6.11E-3	7.08E-5	1.00E-3	4.25E-5	-2.07E-3	5.15E-3
MAETP	kg 1,4-DB-eq	1.47E+1	2.79E-1	1.30E+0	1.63E+1	2.53E-1	3.41E+0	5.16E-2	-4.93E+0	1.51E+1
TETP	kg 1,4-DB-eq	1.31E-3	9.40E-6	7.17E-4	2.03E-3	8.57E-6	2.36E-4	4.73E-7	-6.87E-4	1.59E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.15E-1	6.38E-3	2.37E-2	5.45E-1	5.70E-3	2.50E-1	2.07E-3	-2.53E-1	5.50E-1
GWP-f	kg CO2 eq	5.12E-1	6.37E-3	1.82E-2	5.37E-1	5.70E-3	2.42E-1	2.07E-3	-2.70E-1	5.17E-1
GWP-b	kg CO2 eq	2.31E-3	2.94E-6	3.77E-3	6.08E-3	3.46E-6	7.96E-3	2.50E-6	1.70E-2	3.11E-2
GWP-luluc	kg CO2 eq	5.35E-4	2.33E-6	1.73E-3	2.27E-3	2.02E-6	6.66E-5	5.15E-8	-2.77E-4	2.06E-3
ODP	kg CFC11 eq	2.48E-7	1.41E-9	1.93E-9	2.51E-7	1.31E-9	1.85E-8	7.30E-11	-1.18E-7	1.53E-7
AP	mol H+ eq	2.53E-3	3.70E-5	1.11E-4	2.68E-3	3.25E-5	3.25E-4	1.78E-6	-9.71E-4	2.07E-3
EP-fw	kg P eq	2.33E-5	6.43E-8	3.20E-7	2.36E-5	4.69E-8	2.24E-6	2.33E-9	-9.98E-6	1.59E-5
EP-m	kg N eq	4.40E-4	1.30E-5	2.63E-5	4.79E-4	1.16E-5	8.11E-5	1.46E-6	-1.76E-4	3.97E-4
EP-T	mol N eq	4.80E-3	1.44E-4	2.90E-4	5.23E-3	1.28E-4	8.94E-4	7.10E-6	-1.90E-3	4.37E-3
POCP	kg NMVOC eq	1.67E-3	4.10E-5	8.25E-5	1.80E-3	3.66E-5	2.65E-4	2.46E-6	-6.38E-4	1.46E-3
ADP-mm	kg Sb eq	4.49E-4	1.61E-7	6.36E-7	4.49E-4	1.47E-7	1.24E-6	1.78E-9	-5.95E-6	4.45E-4
ADP-f	MJ	1.30E+1	9.61E-2	2.04E-1	1.33E+1	8.75E-2	8.54E-1	5.34E-3	-6.25E+0	8.05E+0
WDP	m3 depriv.	7.42E-1	3.44E-4	1.58E-1	9.00E-1	2.68E-4	3.44E-2	3.31E-5	-3.51E-1	5.83E-1
PM	disease inc.	2.01E-8	5.72E-10	1.37E-9	2.21E-8	5.14E-10	3.91E-9	3.67E-11	-7.35E-9	1.92E-8
IR	kBq U-235 eq	3.21E-2	4.03E-4	3.24E-4	3.29E-2	3.82E-4	3.01E-3	2.47E-5	-1.20E-2	2.43E-2
ETP-fw	CTUe	1.46E+1	8.57E-2	4.74E-1	1.51E+1	7.10E-2	6.68E+0	7.37E-2	-4.60E+0	1.74E+1
HTP-c	CTUh	3.94E-10	2.78E-12	1.64E-11	4.13E-10	2.53E-12	9.44E-11	1.47E-13	-1.33E-10	3.77E-10
HTP-nc	CTUh	1.26E-8	9.37E-11	5.12E-10	1.32E-8	8.47E-11	2.33E-9	1.45E-11	-4.52E-9	1.11E-8
SQP	Pt	2.67E+0	8.34E-2	1.52E-2	2.77E+0	7.48E-2	5.19E-1	1.37E-2	-3.93E+0	-5.56E-1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.78E-1	1.20E-3	9.92E-1	1.77E+0	1.25E-3	6.14E-2	2.06E-4	-8.41E-1	9.92E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.78E-1	1.20E-3	9.92E-1	1.77E+0	1.25E-3	6.14E-2	2.06E-4	-8.41E-1	9.92E-1
PENRE	MJ	1.40E+1	1.02E-1	2.20E-1	1.43E+1	9.29E-2	9.09E-1	5.66E-3	-6.74E+0	8.56E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.40E+1	1.02E-1	2.20E-1	1.43E+1	9.29E-2	9.09E-1	5.66E-3	-6.74E+0	8.56E+0
PET	MJ	1.48E+1	1.03E-1	1.21E+0	1.61E+1	9.41E-2	9.70E-1	5.87E-3	-7.59E+0	9.55E+0
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	9.23E-3	1.17E-5	3.73E-3	1.30E-2	9.90E-6	1.03E-3	6.55E-6	-4.13E-3	9.89E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.06E-5	2.44E-7	2.17E-7	6.11E-5	2.24E-7	1.45E-6	6.48E-9	-5.48E-6	5.73E-5
NHWD	kg	5.23E-2	6.10E-3	3.34E-4	5.88E-2	5.42E-3	3.26E-2	2.34E-2	-1.90E-2	1.01E-1
RWD	kg	3.20E-5	6.31E-7	4.01E-7	3.31E-5	5.95E-7	3.23E-6	3.48E-8	-1.09E-5	2.60E-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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