Environmental Profile

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

Ecochain v3.5.80

Ecochain

Product:	3001570 - KG Repair Coupler BR DN100 EXP
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3
	7772 SG Hardenberg
	Netherlands

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

WAVIN
An Orbia business.

SGS | **SEARCH**

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.

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	0.06	0	0	0.06	0	0.02	0	−0.02	0.05
ADPE	kg Sb-eq	4.34E-4	1.57E-7	7.39E-7	4.35E-4	1.43E-7	1.20E-6	1.72E-9	−5.79E-6	4.31E-4
ADPF	kg Sb-eq	6.01E-3	4.51E-5	1.27E-4	6.18E-3	4.02E-5	4.17E-4	2.39E-6	−2.91E-3	3.73E-3
GWP	kg CO2-eq	4.87E-1	6.13E-3	2.41E-2	5.18E-1	5.47E-3	2.36E-1	1.72E-3	−2.57E-1	5.04E-1
ODP	kg CFC-11-eq	2.39E-7	1.09E-9	1.91E-9	2.42E-7	1.01E-9	1.73E-8	5.71E-11	−1.15E-7	1.46E-7
POCP	kg ethene-eq	3.39E-4	3.70E-6	1.05E-5	3.53E-4	3.28E-6	3.29E-5	4.37E-7	−1.22E-4	2.68E-4
AP	kg SO2-eq	2.04E-3	2.70E-5	1.04E-4	2.17E-3	2.35E-5	2.49E-4	1.29E-6	−7.77E-4	1.67E-3
EP	kg PO4 3--eq	2.56E-4	5.30E-6	1.33E-5	2.75E-4	4.70E-6	3.95E-5	6.66E-7	−1.05E-4	2.15E-4
HTP	kg 1,4-DB-eq	1.97E-1	2.58E-3	1.12E-2	2.11E-1	2.34E-3	6.29E-2	1.35E-4	−7.42E-2	2.02E-1
FAETP	kg 1,4-DB-eq	5.57E-3	7.54E-5	3.82E-4	6.03E-3	6.85E-5	9.67E-4	4.12E-5	−2.02E-3	5.08E-3
MAETP	kg 1,4-DB-eq	1.43E+1	2.71E-1	1.51E+0	1.61E+1	2.45E-1	3.30E+0	5.00E-2	−4.77E+0	1.49E+1
TETP	kg 1,4-DB-eq	1.27E-3	9.13E-6	8.32E-4	2.11E-3	8.29E-6	2.28E-4	4.59E-7	−6.69E-4	1.68E-3

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.01E-1	6.19E-3	2.76E-2	5.35E-1	5.52E-3	2.45E-1	2.01E-3	−2.45E-1	5.42E-1
GWP-f	kg CO2 eq	4.98E-1	6.18E-3	2.12E-2	5.26E-1	5.51E-3	2.37E-1	2.01E-3	−2.62E-1	5.08E-1
GWP-b	kg CO2 eq	2.18E-3	2.86E-6	4.37E-3	6.55E-3	3.35E-6	7.96E-3	2.43E-6	1.71E-2	3.16E-2
GWP-luluc	kg CO2 eq	5.23E-4	2.27E-6	2.01E-3	2.54E-3	1.95E-6	6.43E-5	4.99E-8	−2.72E-4	2.33E-3
ODP	kg CFC11 eq	2.40E-7	1.37E-9	2.24E-9	2.44E-7	1.27E-9	1.79E-8	7.08E-11	−1.14E-7	1.49E-7
AP	mol H+ eq	2.47E-3	3.59E-5	1.29E-4	2.64E-3	3.14E-5	3.14E-4	1.73E-6	−9.42E-4	2.04E-3
EP-fw	kg P eq	2.26E-5	6.24E-8	3.71E-7	2.30E-5	4.54E-8	2.16E-6	2.27E-9	−9.69E-6	1.56E-5
EP-m	kg N eq	4.29E-4	1.26E-5	3.05E-5	4.72E-4	1.12E-5	7.86E-5	1.43E-6	−1.71E-4	3.92E-4
EP-T	mol N eq	4.69E-3	1.39E-4	3.37E-4	5.16E-3	1.24E-4	8.66E-4	6.89E-6	−1.84E-3	4.32E-3
POCP	kg NMVOC eq	1.63E-3	3.98E-5	9.58E-5	1.77E-3	3.54E-5	2.56E-4	2.39E-6	−6.19E-4	1.44E-3
ADP-mm	kg Sb eq	4.34E-4	1.57E-7	7.39E-7	4.35E-4	1.43E-7	1.20E-6	1.72E-9	−5.79E-6	4.31E-4
ADP-f	MJ	1.27E+1	9.33E-2	2.37E-1	1.30E+1	8.46E-2	8.25E-1	5.18E-3	−6.06E+0	7.89E+0
WDP	m3 depriv.	7.18E-1	3.34E-4	1.83E-1	9.02E-1	2.60E-4	3.32E-2	3.21E-5	−3.40E-1	5.95E-1
PM	disease inc.	1.98E-8	5.55E-10	1.60E-9	2.19E-8	4.98E-10	3.78E-9	3.56E-11	−7.17E-9	1.91E-8
IR	kBq U-235 eq	3.13E-2	3.91E-4	3.77E-4	3.21E-2	3.70E-4	2.91E-3	2.40E-5	−1.16E-2	2.38E-2
ETP-fw	CTUe	1.42E+1	8.32E-2	5.50E-1	1.49E+1	6.87E-2	6.45E+0	7.12E-2	−4.49E+0	1.70E+1
HTP-c	CTUh	3.83E-10	2.70E-12	1.90E-11	4.05E-10	2.45E-12	9.12E-11	1.42E-13	−1.28E-10	3.70E-10
HTP-nc	CTUh	1.22E-8	9.10E-11	5.95E-10	1.29E-8	8.19E-11	2.25E-9	1.40E-11	−4.37E-9	1.08E-8
SQP	Pt	2.63E+0	8.09E-2	1.77E-2	2.73E+0	7.24E-2	5.01E-1	1.32E-2	−3.91E+0	−5.93E-1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.60E-1	1.17E-3	1.15E+0	1.91E+0	1.21E-3	5.93E-2	2.01E-4	-8.33E-1	1.14E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.60E-1	1.17E-3	1.15E+0	1.91E+0	1.21E-3	5.93E-2	2.01E-4	-8.33E-1	1.14E+0
PENRE	MJ	1.36E+1	9.90E-2	2.56E-1	1.40E+1	8.99E-2	8.78E-1	5.49E-3	-6.54E+0	8.39E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.36E+1	9.90E-2	2.56E-1	1.40E+1	8.99E-2	8.78E-1	5.49E-3	-6.54E+0	8.39E+0
PET	MJ	1.44E+1	1.00E-1	1.41E+0	1.59E+1	9.11E-2	9.37E-1	5.69E-3	-7.37E+0	9.53E+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	8.98E-3	1.14E-5	4.33E-3	1.33E-2	9.58E-6	1.00E-3	6.36E-6	-4.02E-3	1.03E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.86E-5	2.36E-7	2.52E-7	5.91E-5	2.16E-7	1.40E-6	6.28E-9	-5.32E-6	5.54E-5
NHWD	kg	5.13E-2	5.92E-3	3.88E-4	5.76E-2	5.25E-3	3.16E-2	2.27E-2	-1.84E-2	9.87E-2
RWD	kg	3.13E-5	6.13E-7	4.66E-7	3.24E-5	5.76E-7	3.12E-6	3.37E-8	-1.05E-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