Environmental Profile

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

Ecochain v3.5.71

Product:	3030797 - Hep20 Barrier Pipe WT 15 L=400
Unit:	1 piece
Manufacturer:	Wavin - UK - Doncaster - Verified

Suitable for various professional plumbing jobs. Hep20 is packed with unique features that make push-fit plumbing fitting easier quicker and more secure for installers. No additional equipment or tools required when installing or demounting fittings compared to others where a solder or glue is required. Just push the pipework into the fitting to create a watertight seal. A wide range of plastic fittings, plumbing pipes and tubes are available. It is the only system with joint recognition and se

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	09-02-2023
End of validity:	09-02-2028
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 - UK - Doncaster - 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

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	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.18E+2	2.55E+0	1.52E+1	1.36E+2	7.86E-1	2.83E+1	3.42E-1	-6.76E+1	9.77E+1
GWP-f	kg CO2 eq	1.21E+2	2.55E+0	1.41E+1	1.38E+2	7.85E-1	2.16E+1	3.42E-1	-6.44E+1	9.63E+1
GWP-b	kg CO2 eq	-3.16E+0	1.45E-3	1.10E+0	-2.05E+0	4.77E-4	6.63E+0	3.42E-4	-3.21E+0	1.37E+0
GWP-luluc	kg CO2 eq	1.05E-2	9.35E-4	5.22E-3	1.67E-2	2.78E-4	3.04E-3	6.62E-6	-8.05E-4	1.92E-2
ODP	kg CFC11 eq	1.21E-6	5.84E-7	1.62E-6	3.42E-6	1.81E-7	6.02E-7	9.31E-9	-9.20E-7	3.29E-6
AP	mol H+ eq	7.89E-1	1.78E-2	3.36E-2	8.40E-1	4.47E-3	2.29E-2	2.30E-4	-3.22E-1	5.46E-1
EP-fw	kg P eq	6.33E-4	2.04E-5	9.83E-5	7.52E-4	6.46E-6	1.13E-4	3.04E-7	-5.83E-5	8.13E-4
EP-m	kg N eq	9.30E-2	5.94E-3	7.21E-3	1.06E-1	1.60E-3	6.86E-3	4.24E-4	-4.29E-2	7.22E-2
EP-T	mol N eq	1.03E+0	6.56E-2	6.95E-2	1.16E+0	1.76E-2	7.47E-2	9.18E-4	-4.69E-1	7.84E-1
POCP	kg NMVOC eq	5.37E-1	1.84E-2	2.25E-2	5.78E-1	5.04E-3	2.25E-2	3.34E-4	-2.57E-1	3.49E-1
ADP-mm	kg Sb eq	9.50E-4	6.36E-5	1.41E-4	1.16E-3	2.03E-5	9.08E-5	2.25E-7	-1.46E-5	1.25E-3
ADP-f	MJ	2.69E+3	3.88E+1	1.99E+2	2.93E+3	1.20E+1	7.05E+1	6.85E-1	-1.41E+3	1.60E+3
WDP	m3 depriv.	2.39E+1	1.16E-1	1.94E+0	2.59E+1	3.70E-2	1.50E+0	3.16E-3	-6.37E+0	2.11E+1
PM	disease inc.	6.13E-6	2.23E-7	2.47E-7	6.60E-6	7.09E-8	3.45E-7	4.67E-9	-2.73E-6	4.29E-6
IR	kBq U-235 eq	5.64E-1	1.70E-1	1.69E-1	9.03E-1	5.27E-2	2.17E-1	3.30E-3	-6.60E-2	1.11E+0
ETP-fw	CTUe	3.73E+2	3.12E+1	1.73E+2	5.77E+2	9.78E+0	1.08E+2	1.41E+0	-4.55E+1	6.50E+2
HTP-c	CTUh	3.74E-8	1.14E-9	7.19E-9	4.57E-8	3.48E-10	9.69E-9	1.81E-11	-4.44E-9	5.13E-8
HTP-nc	CTUh	5.27E-7	3.68E-8	1.51E-7	7.15E-7	1.17E-8	1.30E-7	5.73E-10	-1.06E-7	7.51E-7
SQP	Pt	4.19E+2	3.21E+1	2.44E+1	4.75E+2	1.03E+1	-1.86E+2	1.74E+0	-1.82E+1	2.83E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.14E+1	5.44E-1	3.34E+2	4.06E+2	1.73E-1	-3.19E+1	3.14E-2	-9.60E+0	3.65E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.14E+1	5.44E-1	3.34E+2	4.06E+2	1.73E-1	-3.19E+1	3.14E-2	-9.60E+0	3.65E+2
PENRE	MJ	2.89E+3	4.12E+1	2.19E+2	3.15E+3	1.28E+1	7.51E+1	7.26E-1	-1.52E+3	1.72E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.89E+3	4.12E+1	2.19E+2	3.15E+3	1.28E+1	7.51E+1	7.26E-1	-1.52E+3	1.72E+3
PET	MJ	2.96E+3	4.18E+1	5.53E+2	3.56E+3	1.30E+1	4.33E+1	7.58E-1	-1.53E+3	2.08E+3
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	5.68E-1	4.29E-3	5.79E-2	6.30E-1	1.36E-3	4.38E-2	8.53E-4	-1.42E-1	5.34E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.10E-4	9.67E-5	2.12E-4	6.19E-4	3.08E-5	1.11E-4	8.17E-7	-1.77E-4	5.84E-4
NHWD	kg	8.60E+0	2.31E+0	9.91E-1	1.19E+1	7.47E-1	3.68E+0	2.99E+0	-6.66E-1	1.87E+1
RWD	kg	5.79E-4	2.64E-4	1.61E-4	1.00E-3	8.19E-5	2.73E-4	4.51E-6	-7.88E-5	1.28E-3
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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