Environmental Profile

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

Ecochain v3.5.71

Product:	3030789 - Hep20 Barrier Pipe W 15 L=6
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	1.81E+0	3.74E-2	2.26E-1	2.08E+0	1.18E-2	3.29E-1	5.12E-3	-9.61E-1	1.46E+0
GWP-f	kg CO2 eq	1.80E+0	3.73E-2	2.09E-1	2.05E+0	1.18E-2	3.29E-1	5.12E-3	-9.58E-1	1.44E+0
GWP-b	kg CO2 eq	7.75E-3	2.12E-5	1.63E-2	2.40E-2	7.16E-6	-4.64E-4	5.13E-6	-3.77E-3	1.98E-2
GWP-luluc	kg CO2 eq	1.51E-4	1.37E-5	7.75E-5	2.42E-4	4.17E-6	7.05E-5	9.94E-8	-1.47E-5	3.03E-4
ODP	kg CFC11 eq	2.58E-8	8.55E-9	2.40E-8	5.84E-8	2.72E-9	1.03E-8	1.40E-10	-1.74E-8	5.42E-8
AP	mol H+ eq	1.17E-2	2.61E-4	4.99E-4	1.24E-2	6.72E-5	3.91E-4	3.46E-6	-4.78E-3	8.13E-3
EP-fw	kg P eq	9.99E-6	2.99E-7	1.46E-6	1.17E-5	9.70E-8	2.07E-6	4.57E-9	-1.14E-6	1.28E-5
EP-m	kg N eq	1.38E-3	8.71E-5	1.07E-4	1.57E-3	2.40E-5	1.15E-4	6.29E-6	-6.37E-4	1.08E-3
EP-T	mol N eq	1.52E-2	9.61E-4	1.03E-3	1.72E-2	2.65E-4	1.26E-3	1.38E-5	-6.96E-3	1.17E-2
POCP	kg NMVOC eq	7.92E-3	2.70E-4	3.34E-4	8.52E-3	7.57E-5	3.89E-4	5.02E-6	-3.80E-3	5.19E-3
ADP-mm	kg Sb eq	1.44E-5	9.31E-7	2.10E-6	1.74E-5	3.05E-7	1.50E-6	3.38E-9	-3.82E-7	1.88E-5
ADP-f	MJ	4.01E+1	5.68E-1	2.96E+0	4.36E+1	1.81E-1	1.19E+0	1.03E-2	-2.11E+1	2.39E+1
WDP	m3 depriv.	3.65E-1	1.70E-3	2.88E-2	3.95E-1	5.56E-4	2.54E-2	4.75E-5	-1.06E-1	3.15E-1
PM	disease inc.	9.01E-8	3.26E-9	3.66E-9	9.70E-8	1.06E-9	6.12E-9	7.02E-11	-4.05E-8	6.38E-8
IR	kBq U-235 eq	8.99E-3	2.48E-3	2.50E-3	1.40E-2	7.91E-4	3.62E-3	4.95E-5	-1.34E-3	1.71E-2
ETP-fw	CTUe	5.77E+0	4.57E-1	2.57E+0	8.80E+0	1.47E-1	2.00E+0	2.34E-2	-7.36E-1	1.02E+1
HTP-c	CTUh	5.37E-10	1.67E-11	1.07E-10	6.60E-10	5.23E-12	1.64E-10	2.71E-13	-6.92E-11	7.61E-10
HTP-nc	CTUh	7.94E-9	5.39E-10	2.24E-9	1.07E-8	1.75E-10	2.14E-9	8.97E-12	-1.72E-9	1.13E-8
SQP	Pt	1.72E+0	4.70E-1	3.62E-1	2.55E+0	1.55E-1	9.29E-1	2.61E-2	-1.08E-1	3.55E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.23E-1	7.97E-3	4.96E+0	5.39E+0	2.60E-3	6.08E-2	4.70E-4	-1.05E-1	5.35E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.23E-1	7.97E-3	4.96E+0	5.39E+0	2.60E-3	6.08E-2	4.70E-4	-1.05E-1	5.35E+0
PENRE	MJ	4.31E+1	6.03E-1	3.24E+0	4.69E+1	1.92E-1	1.27E+0	1.09E-2	-2.27E+1	2.57E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.31E+1	6.03E-1	3.24E+0	4.69E+1	1.92E-1	1.27E+0	1.09E-2	-2.27E+1	2.57E+1
PET	MJ	4.35E+1	6.11E-1	8.20E+0	5.23E+1	1.95E-1	1.33E+0	1.14E-2	-2.28E+1	3.10E+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	8.62E-3	6.28E-5	8.60E-4	9.54E-3	2.05E-5	7.38E-4	1.28E-5	-2.22E-3	8.09E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.78E-6	1.41E-6	3.15E-6	9.34E-6	4.63E-7	1.97E-6	1.23E-8	-2.73E-6	9.05E-6
NHWD	kg	1.27E-1	3.38E-2	1.47E-2	1.75E-1	1.12E-2	5.72E-2	4.48E-2	-1.04E-2	2.78E-1
RWD	kg	9.00E-6	3.87E-6	2.38E-6	1.52E-5	1.23E-6	4.52E-6	6.78E-8	-1.48E-6	1.96E-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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